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AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH
SPATIAL VARIATIONS OF CRIME IN WISCONSIN: A MACROSCALE; MULTIVAR-ETC(U)
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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER <i>14-461</i> 80-581	2. GOVT ACCESSION NO. <i>AD-A101-498</i>	3. RECIPIENT'S CATALOG NUMBER
6. TITLE (and Subtitle) <i>Spatial Variations of Crime in Wisconsin: A Macroscale, Multivariate Analysis.</i>		5. TYPE OF REPORT & PERIOD COVERED <i>THESIS/DISSERTATION</i>
7. AUTHOR(s) <i>Paul Gary Hough</i>	8. CONTRACT OR GRANT NUMBER(s) <i>9 11/2-1-11-1</i>	
9. PERFORMING ORGANIZATION NAME AND ADDRESS AFIT STUDENT AT: University of Wisconsin		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS <i>11</i>
11. CONTROLLING OFFICE NAME AND ADDRESS AFIT/NR WPAFB OH 45433		12. REPORT DATE <i>11 1980</i>
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) <i>12-67</i>		13. NUMBER OF PAGES <i>121</i>
16. DISTRIBUTION STATEMENT (of this Report) APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED		15. SECURITY CLASS. (of this report) <i>UNCLASS</i>
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE <i>S JUL 17 1981</i>
18. SUPPLEMENTARY NOTES APPROVED FOR PUBLIC RELEASE: IAW AFR 190-17 <i>23 JUN 1981</i>		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) <i>FREDERIC C. LYNCH</i>		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) <i>ATTACHED</i>		

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Abstract

The geography of crime is a growing subfield which has continued and expanded upon past criminological research. Most studies of crime, however, are limited to analysis of seven 'street' crimes: murder, assault, rape, robbery, burglary, larceny, and auto theft. Generally, most offenders of these crimes are of low socioeconomic status. The weak development of criminal theory was consequently seen as a direct result of the extreme concentration on this class of crime.

Hypotheses were formulated that 1) variables selected on the basis of previous associations with street crime would also explain low class crime in Wisconsin, but 2) these variables would explain less of the variation in higher status crimes such as victimless and white-collar crime. To test these hypotheses, the variables were reduced to their underlying dimensions via principal components analysis, and the resulting factors served as independent variables in a stepwise multiple regression with arrest rates for the various crimes. Crimes known to police were also employed as dependent variables on both the state and city level, but only for violent and property crime.

The results of this study clearly showed that a set of environmental variables yield less explanation for aggregate criminal behavior as the status of the crime increases. Thus, the five dimensions which emerged were successful in explaining 71% of the statistical variation in violent crime arrest rates, but only 51% for property crime, 35% for victimless crime, and 26% for white-collar crime. When crimes known to police was used as the dependent variable explanation decreased, as it did when the analysis was performed at the tract level in Milwaukee. These findings, however, did not alter the major conclusion that a more comprehensive theory of criminal behavior must include crimes of higher status than street crime.

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SPATIAL VARIATIONS OF CRIME IN WISCONSIN:
A MACROSCALE, MULTIVARIATE ANALYSIS

By

PAUL GARY HOUGH

A thesis submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE
(Geography)

At the

UNIVERSITY OF WISCONSIN

1980

Abstract

The geography of crime is a growing subfield which has continued and expanded upon past criminological research. Most studies of crime, however, are limited to analysis of seven 'street' crimes: murder, assault, rape, robbery, burglary, larceny, and auto theft. Generally, most offenders of these crimes are of low socioeconomic status. The weak development of criminal theory was consequently seen as a direct result of the extreme concentration on this class of crime.

Hypotheses were formulated that 1) variables selected on the basis of previous associations with street crime would also explain low class crime in Wisconsin, but 2) these variables would explain less of the variation in higher status crimes such as victimless and white-collar crime. To test these hypotheses, the variables were reduced to their underlying dimensions via principal components analysis, and the resulting factors served as independent variables in a stepwise multiple regression with arrest rates for the various crimes. Crimes known to police were also employed as dependent variables on both the state and city level, but only for violent and property crime.

The results of this study clearly showed that a set of environmental variables yield less explanation for aggregate criminal behavior as the status of the crime increases. Thus, the five dimensions which emerged were successful in explaining 71% of the statistical variation in violent crime arrest rates, but only 51% for property crime, 35% for victimless crime, and 26% for white-collar crime. When crimes known to police was used as the dependent variable explanation decreased, as it did when the analysis was performed at the tract level in Milwaukee. These findings, however, did not alter the major conclusion that a more comprehensive theory of criminal behavior must include crimes of higher status than street crime.

Table of Contents

	Page
Abstract	ii
Acknowledgements	iv
List of Tables	v
List of Illustrations	vi
Chapter	
One. Introduction	1
Two. Criminological Research	13
The Classical School	14
The Positivist School	
Typological.....	15
Sociological.....	17
Ecological.....	23
Geographical.....	25
Other Research.....	31
Critical Theories	33
Three. A Comprehensive Theory of Crime	39
Wisconsin the Study Area	47
Problems with Crime Statistics	54
Methodology	57
Four. Wisconsin: An Intrastate Analysis	60
Causal Modeling	75
Testing the Research Hypothesis	83
Crimes Known to Police	88
Conclusion	93
Five. Milwaukee: An Intraurban Analysis	95
Regression Results	106
Conclusion	108
Six. Conclusion	110
General Results	112
Recommendations for Further Research	115
Appendix One: Crime Definitions	119
Literature Cited	121

Acknowledgements

I am greatly indebted to my parents, Fay and Mary Hough, whose support through my undergraduate years at the Air Force Academy was invaluable. Without their understanding and encouragement, my graduate studies may have never begun.

For financial support, I gratefully acknowledge the Vilas Trust Fund and the Air Force Institute of Technology.

But for the thesis itself, it is to Dr. Martin Cadwallader that I owe thanks, both for his critical advice and the hope he provided when it seemed that further progress was not possible.

Finally, I must thank my wife, Sandy, for her ability to cope with me as deadlines drew near.

All shortcomings and limitations in this study, however, are the sole responsibility of the author.

List of Tables

<u>Table</u>	<u>Page</u>
1. Sociological Theories	22
2. Regional Crime Variations, 1975	49
3. Index Crime in Wisconsin, 1975	50
4. Intercorrelations Between Crime Offenses	52
5. Structure of Crime Factors	53
6. Variables for County-Level Analysis	69
7. Correlation Matrix (County-data)	70
8. Rotated Factor Matrix (County)	71
9. Regression Results (County)	84
10. Index Crime Offense Rates (Milwaukee)	97
11. Variables for Intraurban Analysis	101
12. Correlation Matrix (Milwaukee-data)	102
13. Rotated Factor Matrix (Milwaukee)	103
14. Regression Results (Milwaukee)	106

List of Illustrations

<u>Map</u>		<u>Page</u>
1. Violent Crime Arrest Rate (County)	63	
2. Property Crime Arrest Rate (County)	64	
3. Victimless Crime Arrest Rate (County)	65	
4. White-Collar Crime Arrest Rate (County)	66	
5. Violent Crimes Known to Police (County)	90	
6. Property Crimes Known to Police (County)	91	
7. Violent Crime Rate (Milwaukee)	99	
8. Property Crime Rate (Milwaukee)	100	

<u>Figure</u>		
1. Continuum of Crime	43	
2. Elements of Criminal Behavior	47	
3. Hypothesized Recursive Models	78	
4. Revised Recursive Models	81	
5. The Universe of Crime	87	

Chapter One

INTRODUCTION:

TOWARDS A BROADER UNDERSTANDING OF CRIME

Over the past two decades crime has reached alarming proportions in most of the nation's states and cities. Greater expenditures by criminal justice departments were also seen, as an increasingly aware and fearful public elected law and order candidates to office. Crime indices as currently measured and defined, however, continued to rise, perhaps because large police forces could only respond to crime, but not to its root causes. The problem of rising crime levels also prompted social scientists from a number of disciplines to devote considerable attention to the study of crime in an attempt to develop a general theory of crime causation. Unfortunately, there has been little consensus as to what are the exact causes of crime, and what is the nature of the criminal process. This lack of scientific agreement may be, in part, due to the complexity of criminal phenomena, but also, perhaps, due to an extreme concentration on one end of the criminal spectrum. Both past and present studies of crime tend to single out those felonies which are most commonly committed by individuals of low socioeconomic status, and either

ignore or disregard other important categories of crime such as "victimless" or corporate crime. Hence, the purpose of this paper is to demonstrate that current theory-building efforts are lacking due to their narrow focus on that class of crime known as "street" crime.

The history of criminological research is replete with studies on the so-called "street" crimes, such as murder, rape, and burglary. However, the need for further inquiry still exists, and the present thesis, therefore, develops a study to determine whether or not low class crime in Wisconsin is the result of the same socioeconomic variables that have been repeatedly emphasized in other criminal investigations. The proposed research goes one step further, however, by including the categories of white-collar property crime and victimless crime. An ecological analysis of low class crime in Wisconsin would provide the basis for interpreting the results of the additional categories, thereby providing input to a larger theoretical framework. Such an approach has not yet been attempted in Wisconsin, and is also unique to the Geography of Crime.

Explorations into the spatial distribution of crime represent a relatively new and fast growing segment of geography. Nevertheless, this particular subfield, despite its spatial approach, has only managed to reempha-

size the focus on low class crime revealed in the criminological literature. Moreover, the geography of crime, like the study of criminology, is essentially positivist in character, but with a weak development of theory (Herbert: 1977, p. 216). In short, geographical studies on crime have attempted to explain the variations in the spatial distribution of common criminal acts by examining related socioeconomic variables through a variety of statistical techniques. What has been proposed above is to repeat this procedure for Wisconsin on an intra-state level, and also to include two new categories which have received scant attention from criminologists and professional geographers alike. By broadening the scope of analysis in such a manner and providing a larger framework for the development of criminal theory, this study should advance the subfield of criminal geography and contribute to the wider field of criminology as well. The following three objectives can be identified:

- (1). To determine whether the same socio-economic predictors of street crime that have been put forward by most studies are also valid for Wisconsin at the intrastate and intraurban levels.
- (2). To determine how, if at all, the spatial distribution of street crime varies from that of white-collar property crime and victimless crime within Wisconsin.

- (3). To determine whether the same set of socioeconomic variables is capable of predicting low class crime and white-collar and victimless crime.

At present, research into the spatial variations of crime in Wisconsin is absent from the published literature, and so the objectives established for this study would fill a void in current knowledge. Perhaps an even more significant aspect of the proposal is that the relationships between low class crime and other important criminal acts, which are examined in the second and third objectives, have not been empirically investigated in the manner proposed by either geographers or criminologists. Hence, research of this nature is desperately needed, and may possibly encourage other scholars to break out of the traditional focus on low class crime.

Currently, studies of crime vary by perspective or content of explanation, methodology, and the type of crime under examination. Each school of criminology attaches importance to a given perspective ranging from ecology or culture to economic determinism or social processes. Similarly, methods employed run the gamut from maps and statistics to clinical studies or actual fieldwork (Sutherland and Cressey: 1978, p. 55). Yet the plethora of perspectives and methodologies have been applied mainly to one subset of crime, and with only limited success.

Despite the abundance of research, exactly what

should be included within a comprehensive, yet realistic, "universe of crime," is still unclear (Georges: 1978, p. 1). The fact that crime varies widely across space, between nations and cultures, and even within the same country, is partly responsible for the lack of agreement. To limit the problem of relativity, many criminologists concentrate on only one crime definition. Nevertheless, different reporting practices and varying definitions employed by social control agencies limit the studies of one crime-type as well as multi-crime research. More serious, however, is the lack of statistics which has prompted most social scientists to examine only violent or property street crime, and to avoid the many other important offenses that are part of the "crime universe."

Each year the FBI compiles and publishes a comprehensive sourcebook of criminal statistics known as the Uniform Crime Reports (UCR). Regardless of its deficiencies, it is accepted by most scholars as the best source of criminal statistics currently available (Pyle: 1974, p. 90). And because it is a prime source of statistical data, the core of criminal studies has focused on those felonies which are included in the UCR. These felonies are considered by many to be low class crimes because of the status of the offenders, and are referred to as "index" or "Part I" crimes. Seven in number, the index

crimes are divided into two categories: violent crimes consisting of murder, forcible rape, aggravated assault, and robbery; and property crimes which include burglary, larceny, and automobile theft. The Crime Index, a composite sum of each crime with equal weighting, "is used as the basic measure of the extent, fluctuation, distribution and nature of crime in our society," on the tenuous assumption that the Index "reflects the true occurrence of crime better than any other kind of data" (Wisconsin Criminal Justice Information: 1975, pp. 12-13). In reality, however, the Index ignores the true nature of crime which is far more complex, and is dominated by the incidence of property crimes which occur much more frequently than violent crimes. Although these problems have been recognized by many criminologists, many studies are still concerned only with variations in the Crime Index. Geographers have also incorporated these statistics into their studies of crime, and consequently, the same near-sighted focus on street crime. As a result, a tremendous volume of quantitative research exists on low class crime, and according to Richard Peet, the statistical studies of this type "merely prove what is already known" (1976, p. 97).

More recently, attention has been paid to crimes other than index crime. In particular, the public has

become more conscious of the ever-present class of victimless crimes including gambling, drugs, and prostitution, and white-collar crimes such as fraud and forgery. But despite renewed interest, little quantitative research has been completed on these "Part II" crimes due to the paucity of statistics. For instance, in the FBI's UCR, the figures on such crimes are aggregated to the national level. This deferential treatment accorded to Part I crimes may be due to the notion that many people are often physically afraid of street crime and possibly only disgusted with other crimes (Levin: 1977, p. 222). More simply, the individual fears the direct contact involved with index crimes, and less so, the indirect costs of white-collar and corporate crimes. Still, a comprehensive analysis of crime requires the incorporation of a greater portion of the criminal spectrum, as posited in this paper. Preliminary analyses of Part II crimes have sometimes revealed significant differences in the nature of the violation as well as the offender when compared to Part I offences and criminals. Such differences are even more apparent when single crimes are isolated and compared, such as grand larceny versus embezzlement. Thus, one might expect that the variables found to be associated with index crimes do not correlate as well with Part II crimes, and furthermore, that the spatial characteristics

of Part I and II crimes also vary accordingly.

The explanatory structures proposed for index crimes vary from behavioral to environmental factors, depending upon the perspective of the researcher. But no matter what the approach, one might expect that there is a different set of explanatory variables for each category of crime, or that the power or adequacy of a given set of variables differs across the criminal spectrum even when a core of variables may be appropriate for many crimes. To test this assumption, it would be desirable to employ the complete battery of perspectives and methodologies across all known crimes (were data available). Since such a comprehensive analysis is beyond the scope of this paper, the more common ecological approach will be used to demonstrate that the development of a more exacting theory of the criminal process calls for, at a minimum, the recognition and study of a wider classification of crime. The ecological method is best suited for handling large quantities of data as well as a wide variety of statistical techniques.

Nettler describes the ecological approach as a method which "examines areas of a country or zones within a city for the association between measures of social position and criminal activity" (Nettler: 1974, p. 107). In general, such studies have revealed an inverse relation

between high status and rates of crime and delinquency (*Ibid.*, p. 107). Additional research has stressed the importance of environmental influences such as poverty, migration, density, crowding, and similar conditions (Turner: 1970, Harries: 1973). But although these factors may be behind much of society's problems with index crime, it is unlikely that they have much to do with all crime, as people are led to believe by media stereotyping. Therefore, the following research hypotheses are proposed:

- (1). Adverse environmental influences may create criminogenic conditions in terms of street crime. Consequently, environmental variables are highly associated with rates of index crime.
- (2). The same environmental influences, as measured by socioeconomic, demographic, and land use data, decrease in predictive power as the status of the crime increases.

Hypothesis one assumes that the environmental variables found to associate highly with street crimes in other research will also be statistically significant to low class crime in Wisconsin. Thus, the test of this hypothesis will meet the study's first objective. Similarly, the test of the second hypothesis will achieve the second and third objectives by regressing the same set of variables used to test the first hypothesis across crimes of different status. However, it is not likely that the environmental variables employed in this study will be as highly associated with victimless and white-collar crimes as they are

with street crime.

In order to test these hypotheses, arrest data for nine crimes were acquired for Wisconsin counties in 1975 and combined into four categories. The resulting categories were then correlated with a fixed set of environmental variables. Furthermore, a similar set of variables were regressed against two of the crime crime categories for which data was available by Milwaukee census tracts (1973), in order to determine the effect of aggregation in the primary analysis. The study of Milwaukee is also important to see whether crime in the state's largest city differs substantially from that of Wisconsin at large, and to compare to past research at the intraurban scale since most studies are undertaken at this level. The general ecological approach outlined here lended itself well to a geographical viewpoint and proved the utility of the methodology when employed in a broad framework.

Fortunately, the Wisconsin Criminal Justice System has compiled arrest data for Part II offences which made this study possible. These figures are published annually by the Crime Information Bureau in the book, Crime and Arrests. Because the reader should be aware of the various crimes being analyzed in this paper, the definitions employed by the Wisconsin Department of Justice are provided in Appendix One under the appropriate crime category.

While the offences described in the Appendix are not crimes in all parts of the world or even in all of the United States, the definitions are important since they establish the basis of criminal behavior for which an arrest is made. Moreover, the offence data is based upon police investigations and charges rather than the findings of any court, jury, or other judicial body. Finally, it should be recognized that the categories of victimless and white-collar crime were labelled by the author, and that significant overlap may be present.

In Chapter II, the goal is to present to the reader the more important research and theory concerning the causes of index crime. Also included is a section on how the Geography of Crime grew out of the past literature and its affect on the present study. The findings of criminologists and geographers are then presented and followed by a short analysis of the more recent work which recognizes the need for a broader study of crime.

Chapter III elaborates on the major hypotheses of the study and then moves to a general description of crime in Wisconsin. Next, the problems with criminal statistics are discussed before proceeding to a discussion of the relevant quantitative methods employed in the study and the rationale for their selection.

The fourth chapter discusses the findings of the

regression analysis on Wisconsin counties in terms of past research and the study hypotheses. In addition, path analysis, a form of the methodology of causal modeling, is employed to structure each of the environmental factors that were produced by the principal components analysis. Although the path structures are presented in what appears to be a rigid model to allow for testing according to the dictates of the scientific method, the models are very flexible and given a non-deterministic interpretation.

With Chapter IV as background, Chapter V was developed to determine the affects of aggregation at the county level. The same methodology was employed in this chapter to determine the urban ecological aspects of Milwaukee, Wisconsin's largest city. Again, interpretation is in light of past research and the major hypotheses.

Lastly, Chapter VI summarizes the study findings, makes recommendations for future work, and discusses the implications for statistical research in crime.

Chapter Two
CRIMINOLOGICAL RESEARCH:
AN ASSESSMENT OF A THEORETICAL JIGSAW PUZZLE

Attempts to explain the causes of crime and deviance are as old as man, but the science of criminology is generally said to have begun with Lombroso who attempted to correlate criminals with various body types (Schafer: 1969, p. 111). Criminology, however, was a multidisciplinary field, and Lombroso's ideas were soon discarded by social scientists attaching importance to a host of other theories. Regardless of their theoretical and methodological differences, though, a common thread existed among these early scholars-- the rejection of supernatural explanations according to the requirements of scientific inquiry. This naturalistic orientation to the problems of causation was reflected in the early classical school and even more so in the positivist school which developed later. In the twentieth century, the bulk of criminal theory came from sociologists of the positivist school, although the numerous theories of criminal causation often contradicted each other. The geographic study of crime is also a member of the positivist tradition and grew out of the descriptive studies of urban ecology in the nineteen sixties. Thus,

one goal of further geographic research in crime would be to incorporate its findings into the larger body of existing theory, and to move away from the emphasis on street crimes that has pervaded criminology since its inception.

The Classical School

The Classical School of criminology was founded by the Italian, Beccaria, during the early part of the nineteenth century under the doctrine of human free will.

Basically, this school incorporates the hedonistic philosophy where man chooses his actions after a determination of the relative costs and benefits involved (Vold: 1979, p. 416). The classical argument was employed by early criminal law reformers concerned over sentencing disparities and is still used in penology debate today. Sutherland and Cressey (1978, p. 56) note that, with only slight modifications, the classical doctrine became the backbone of modern law. But while even-handed application of stiff criminal penalties sounds good in theory, it does not always apply in reality.

The classical statement is also behind the proponents of Deterrence Theory who insist that the continuing high rates of crime are a direct result of soft-handed justice. Most criminologists, however, have rejected this stance and taken up the search for external causes of crime such as poverty and urban crowding. Perhaps if the influence

of confounding variables could be held constant, then the classical assertion might be more difficult to dismiss. More refined analyses that attempt to do just this are seen in the newer Econometric Theories which are based on the economic model of choice and utilize statistical techniques (Vold: 1979, p. 32). The economic models, though interesting, are still an indirect means of measuring the individual's perception of the costs of criminal action since the usual procedure is to demonstrate that aggregate criminal behavior increases as economic opportunities decline in society. These models cannot determine, however, the manner in which the individual goes about making the decision to engage in criminal action, nor can they measure the economic threshold at which such decisions are made.

The present study does not reject the classical notions, but rather, asserts that the probability of human decision-making is a black box which operates upon the environmental variables found to be important by the positivists.

The Positivist School

Typological Branch

The positivist, "scientific" school of criminology got its start when Lombroso hypothesized that criminals were born and had distinctive physical traits. Lombroso

modified his theory to include external factors after extensive criticism, but the idea that individual defects of some sort were a cause of criminality persisted. Scholars who insist on human deficiencies as the major factor in criminal behavior have contributed to the set of Typological Theories which include assertions of low intelligence and psychopathies as prominent among offenders. These notions were discarded early in the twentieth century after tests failed to validate any of the typologists claims. Almost by default, then, theories emphasizing certain aspects of social structure and organization became the most persuasive and influential models of illicit behavior (Savitz: 1967, p. 51).

Major breakthroughs in the late nineteen seventies in the biology of crime, however, have led to the revival of neo-Lombrosianism concerning genetics, brain function, and learning disabilities (Jeffery: 1979). Nevertheless, the new studies have provided evidence of human failings in only a small percentage of offenders, and as with other studies, in the street crime category. Before typological theories are truly recognized, they will have to demonstrate that a much greater percentage of street crime is due to brain and genetic disorder. Learning disorders do not appear to be a factor in higher status crimes. The influence of genetic factors is therefore assumed to be

minimal, and problems of measurement and data availability do not allow for their incorporation in the present paper.

Sociological Branch

The bulk of criminal theory has originated from sociologists who believe in various forms of social determinism without any biological or environmental inputs to criminal behavior. Although intuitively appealing, these theories of group phenomena are difficult to test because of problems of measurement. For instance, how does one quantify the influence of culture or peer groups in the learning of criminal behavior. Moreover, the group process theories overlap a great deal with many theories, differing only by the degree of emphasis placed upon the various aspects of social organization. Despite these shortcomings, it is important to understand the theories if one is to understand the relationship between environmental variables and crime.

The subset of theories dealing with the breakdown of community structures that normally resist criminal tendencies is usually referred to under the category of Social Disorganization or Anomie. The relationship between crime and anomie was first hypothesized by Durkheim in his doctoral thesis published in 1893. Durkheim viewed anomie as a pathological state of inadequate regulation that developed concurrently with industrialization in modern,

"organic societies" (Vold: 1979, p. 208). Indeed, Tobias (1972, p. 255) attributes the high incidence of urban crime in Victorian England to a "society in violent economic and social transition." The problem with this explanation, however, is that society has had time to adjust to the processes of industrialization and urbanization, and yet, crime continues to rise. Furthermore, factors other than Durkheim's inadequate regulation may have been responsible for crime when a society experienced industrialization.

The concept of anomie was further developed by Merton who claimed that normlessness is inevitable for the lower class of American social structure because they are subjected to the culturally defined goal of wealth accumulation and not provided adequate means to attain that end (Savitz: 1967, p. 57). Unfortunately, anomie theory was developed as an explanation for street crime and fails to account for the segment of society that has already achieved wealth and status, and yet violates the law to acquire yet more.

A very similar set of theories which emphasizes societal structure and stratification more than the process by which social disorganization occurs, has been called the Means/Ends Paradigm (or the Opportunity Structure Paradigm). The assumption here is that there is a dis-

crepency between middle class goals and the societal means for attaining them (Cohen: 1955, Proveda: 1970). A major subset of the means/ends paradigm is Economic Determinism, which attributes criminal acts to the destitution of the working class in a competitive capitalist society (Radzinowicz: 1971). Finally, an effort to link anomie with opportunity theory was provided by Cloward and Olin in 1961, who postulated that the differential distribution of legitimate opportunities for achieving culturally mandated success insures that a high proportion of lower-class boys will be attracted to a delinquent subculture where normlessness prevails (Savitz: 1967, p. 57). No quantitative evidence has been provided to strengthen these charges, however, and the destitution of the working class falls short as an explanation for white-collar crime which costs the economy over \$40 billion annually (Sub-committee on Crime: 1978, p. 8).

Theories that emphasize the Normal Learning Process provide the final group of sociological theories. The scholars belonging to this group reject the idea of a delinquent subculture as one without restraining norms. On the contrary, they claim that illegal actions constitute the expected behavior pattern of the individual in the group. Thus, the delinquent is normally adjusted within the group; and it is the group that is at variance with

the rest of society (Vold: 1979, p. 418). Miller's Reference Group Theory (1958) and Wolfgang's Subculture of Violence (196?) also fall into this category (Wolfgang, Savitz, and Johnston: 1970). The differences between these theories are the means by which variant groups form. Reckless' Containment Theory incorporates part of the learning theories in an attempt to combine sociological and psychological criminal theory by recognizing the importance of both behavioral and environmental factors.

Another branch of sociological theories dealing with subcultural variations in the national society may be lumped under the name, Culture Conflict. According to this theory, a criminogenic situation is produced when norms of conduct are at variance with those of the overall society (Haskell and Yablonsky: 1970). Culture conflict may be subdivided into primary conflict which occurs when the norms of an immigrant group are at variance with overall societal expectations, and secondary conflict which involves the friction between a subculture and overall society. As with other sociological theories, no quantitative evidence has been put forth to substantiate the postulates of culture conflict. In addition, culture conflict is deficient in explaining the criminal actions of offenders who are part of mainstream America.

Sutherland and Cressey's Differential Association

Theory (1978), perhaps the major criminal action theory in sociology, is the most powerful learning theory. Criminal behavior, according to differential association, "is learned in interaction with other persons in a process of communication ... within intimate personal groups." Moreover, "the specific direction of motives and drives is learned from definitions of the legal codes as favorable or unfavorable" (1978, pp. 80-81). For Sutherland and Cressey, then, there is culture conflict in relation to legal codes, and differential association therefore has the possibility to explain all criminal actions. But differential association seems to deny that much of criminal behavior is the outcome of individual, planned action, apart from any group. Further, Sutherland and Cressey claim that environmental variables are not important since both law-abiding and criminal behavior are outcomes in poor physical settings. Others do not agree. Nettler (1974) and Adams (1974) both note that differential association remains largely untested since researchers have been unable to operationalize the concepts. Adams goes further and notes that while social variables are important, a review of 116 empirical studies revealed that nonsocial variables (noninteractive) were considered clearly superior in the majority of research. An experiment also revealed that for a group of delinquents, money was a

a more important factor than peer pressure when given the opportunity to steal. On the basis of this evidence, Adams concludes that "an explanation of human behavior disregarding nonsocial variables fails to include parameters of possible major significance" (Adams: 1974, p. 4)

The major sociological theories are summarized in Table 1 below.

Table 1.

Sociological Theories

<u>Theory</u>	<u>Major Postulates</u>
Anomie-	Also known as social disorganization. The breakdown of community structures which occurs in the lower class due to pressures of industrialization and societal goals of success leads to increased criminal activity.
Means/Ends Paradigm-	Crime is prevalent because middle class goals are not attainable by members of low socioeconomic status.
Economic Determinism-	Criminal acts result from the poverty of the working class in a capitalistic society.
Reference Group Theory-	Criminal behavior is viewed as normal within the individual's peer group. It is society that defines the behavior as delinquent.
Containment Theory-	recognizes that criminal behavior is learned from the peer group, but claims that environmental factors have led the group to this form of behavior in the first place.
Culture Conflict-	The norms of conduct in some cultures (immigrant, subcultures) are at variance with those of society.
Differential Association Theory-	Criminal behavior is learned from communication within ones peer group.

Ecological Branch

Criminal research, however, has not concentrated solely upon social and psychological explanations. From 1830 - 1880, the early Cartographic school was founded, and revealed a concern with the geographic location of crime to various socioeconomic data (Phillips: 1972). This approach later became known as the Human Ecological school. Emphasis was now placed on crime as a collective entity rather than on the individual, and research concentrated on the physical and demographic characteristics of "natural" areas of crime. However, the early criminal ecologists directed their attention to factors involved in the comparative analysis of urban versus rural crime patterns. Modern ecologists, on the other hand, attempt to introduce "ecological determinism" in the "search for spatial influences on social life and deviant behavior" (Schafer: 1969, p. 228). Ecological determinism, therefore, represents the exact opposite of differential association theory in that social variables are seen as irrelevant in the explanation of criminal behavior. Nevertheless, Turner (1970, p. 4) has identified at least three attributes that the early ecologists shared with modern researchers: 1) they sought to quantify social events, 2) they analyzed collective phenomena, and 3) they sought objective social forces as causes.

Although the impact of the cartographic school faded in the late nineteenth century, human ecologists from the Chicago School of Sociology gave this approach its greatest boost. Scholars such as Ernest W. Burgess, Clifford A. Shaw, and Henry D. McKay working in the late 1920's and 1930's, found that crime flourished in neighborhoods characterized by social disorganization, economic deprivation, and extensive socio-economic heterogeneity (Georges: 1978, p. 3). Shaw and McKay suggested Cultural Transmission (an outgrowth of social disorganization) as the mechanism by which illegitimate values were maintained in highly delinquent neighborhoods (Savitz: 1967, p. 58). Most ecological research, however, has stressed the associational relationships rather than causal explanations of crime. Consequently, such research has been severely criticized for its essentially descriptive nature.

Geographical Branch

Although geographers did not become seriously involved in the study of crime until the mid-nineteen sixties, the human ecologists of the Chicago school certainly took a geographical approach in their work. The majority of geographers entering the field have therefore attempted to build upon the ecological approach in their effort to explain the spatial variations in crime. But while the focus of most studies has been on aggregate data of lower

class crime in North American cities, this research has not produced any theoretical framework or definite geographical approach to the study of crime. Instead, the main contribution from the geographic discipline has been only the development of increasingly sophisticated research methods and confirmation of past findings that a host of environmental and cultural factors are criminogenic. The geographic study of crime is therefore in its infancy, and the literature review in this section reveals the need for the type of research offered by the present paper.

If ecological research represents the core of criminal geography, environmentalism provides a logical link which has been explored by several geographers. One such study by Lewis and Alford (1975) examines "the influence of season and climate on assault rates in large cities" (p. 214). The hypothesis that violent crimes are associated with warm weather (the 'thermic law of delinquency') was tested on fifty-six cities and rejected after comparing standardized scores of monthly assault rates. The incidence of assault did not follow the annual march of the sun leading Lewis and Alford to conclude that "the rate appears to be responding to the month rather than the social possibilities of the weather" (p. 215). The study therefore seems to suggest that warm weather violence is culturally determined. Similarly, Miller (1968)

found a correlation between Santa Ana winds and an above normal number of homocides in the Los Angeles area. Lastly, Kaplan (1960) concedes to the primacy of social and cultural factors, but argues that the significance of the relationship between season and increased criminal activity "cannot be casually rejected." While Kaplan's reminder may be true, continued research in this direction appears to be futile. Resources would perhaps be best aimed at clarifying the influence of the host of factors in the physical and social environment which, unlike the weather, can be changed.

A study of crime in Cleveland by Corsi and Harvey (1975) was both areal and ecological. A cartographic technique was employed to depict crime surfaces in the city, and empirical data were analyzed with canonical scores and step-wise discriminant analysis. Although the findings only reinforced already known generalizations, the study is important in that it provided "a methodology for isolating clusters of crimes and socioeconomic variables" that can be applied to individual cities. Indeed, Corsi and Harvey boast the advantages of their methodology over factor analysis and studies "employing canonical correlation alone" (1975, p. 334). Such advantages when applied only to the study of street crimes, however, will probably prove beneficial only to local police departments

and not to a deeper understanding of crime.

In contrast to Corsi's and Harvey's study of Cleveland, a number of papers are based on an ecological analysis of sets of cities. Harries' work (1976a) is representative of such research. In a "Crime Based Analysis," Harries examines crime and socioeconomic correlates in incorporated cities over 25,000 via factor analysis. But the title is misleading if one expects any detailed, crime-based classification. Harries assigned Z-scores to each city and those higher than +.75 were classified as high crime while those with scores lower than -.75 were labelled low crime cities. This procedure eliminated a majority of the cities in the hope that a study of cities exhibiting extreme crime characteristics would "discern general underlying patterns of socioeconomic characteristics" (Harries: 1976a, p. 475). The results showed, that in general, poverty and a young population positively correlated with crime while a high percentage of native-born Americans, high revenue, residential stability, small population, and low construction density were crime inhibitors. These results, although useful, only refer to index crime, and thus, only begin to approach the larger problem of crime in general.

In a later study, Harries (1976b) examined 726 cities by canonical correlation in an effort to "confirm and

extend prior findings at the interurban level" (1976b, p. 369). The new report strengthened the stereotypical view that low income places with young transient populations are criminogenic (p. 384). Thus, Harries has demonstrated that a larger sample and more complex methodology will not provide any significantly new information in the study of crime. Moreover, in both studies Harries failed to relate the importance of cultural factors to the socioeconomic variables which predicted crime. Nevertheless, ecological research of this type can be used as a base for further inspection.

One social variable almost universally included in ecological analyses is the percentage of the population which is black. Nichols (1979) agrees that crime (index crime, that is) is committed disproportionately by blacks, but argues that differences in crime rates between groups are not racial but rather are a result of social pressure (1979, p. 311). Nichols examines black suburban areas and makes the distinction between "colonizing" and "ghettoizing suburbs." Ghettoizing communities in the suburbs, according to Nichols, are those which are receiving the higher socioeconomic status, black migrants, while colonizing suburbs are characterized by low-income blacks, substandard housing, and a lack of water and sewer facilities. The startling find was that colonizing black

suburbs, although of low-income, were virtually crime free. On the other hand, ghettoizing suburbs, which were more socially organized in terms of income, education, and landscape qualities, had high crime rates. However, the high crime rates in these black ghettos were only slightly responsible for the fast rise in suburban crime rates in recent years. More importantly, Nichols suggests on the basis of his findings that the theory of social disorganization may not hold true. One could argue though that anomie is not measured by the indices employed in this study. Still, the implication of this study is that past biases have so influenced research that other important factors may have not yet been discovered.

Recently, geographers have also taken a behavioral approach to crime. A report by Carter and Hill (1976), "The Criminal's Image of the City and Urban Crime Patterns," attempts to link previous ecological research with "why criminals commit crimes where they do" (1976, p. 597). A questionnaire was administered to a black and white criminal sample and a similar control group. The most striking generalization was the rough similarity in the perceptual structure of each group. However, a strong difference in perceptual dimensions existed between black and white criminals. Strategy and familiarity of the target area were equally important for white criminals while

familiarity was of "overriding importance as a predictor" of the black group's crimes (p. 604). Carter and Hill have shown that interesting and useful work can be done via a perceptual analysis of criminal behavior. Obviously, the next step would be to apply this technique to a broader category of crime.

A wide variety of other geographic research also exists. Stephenson (1974), using geostatistical techniques such as centrography, offered an analysis of delinquent behavior in Phoenix which showed that, for most groups, the dispersion of offense locations was less than that of residence locations. An examination of correlation coefficients at the state level by Kowalski, Dittman, and Bung (1980), indicates that the pattern of index crime, with the exception of homicide, "is shifting away from the North and East to the Sunbelt and West" (p. 4). Finally, more detailed analyses are provided by Pyle's monograph, The Spatial Dynamics of Crime (1974), which searches for ecological correlates and common behavior patterns in the Akron, OH. SMSA; and Harries' monograph, Crime and the Environment (1980), which "presents a perspective of crime that approaches explanation from an environmental viewpoint" (p. 4). Perhaps the major weakness in these studies is the lack of any process which links environmental factors to criminal activity. And of course, the type of

crime all these geographers are trying to explain is low-class crime.

While it is clear that a new subfield in geography is rapidly emerging, it is equally clear that geographers have done little more than continue to examine the spatial qualities of index crime. What is required now, is to apply the spatial techniques and perspectives to other categories of crime to see if the same conclusions can be drawn. If a spatial analysis applied to crime in this manner leads to different answers, then perhaps much of the present criminal theory has only limited application.

Other Research Findings

Criminological research, whether geographical or other, has resulted in a stereotypical view of a degenerate environment populated by a high percentage of likely criminal offenders. In order to discover relationships between crime and a number of proposed variables, research since the 1940's has often employed simple correlation analysis. Many have found a strong correlation between city, county, or SMSA size and the crime rate for that unit of scale (Shaw: 1949; Harries: 1974). The explanation for the importance of size is that more people generally create more opportunity for crime as well as increased heterogeneity which may heighten stress and relative deprivation. Within a city, ecological analysis

usually points to areas of high turnover, unemployment and density, and low education, income and housing value (Turner: 1970, p. 62). Characteristics such as these are generally found within the decayed portions of large central cities, and are probably as much a result of societal processes as a factor in causing crime.

On a broader scale, Nettler identified nine conditions as criminogenic (1974, pp. 253-259). These are:

1. The physical relocation of large masses of people.
2. Crowding above a certain threshold.
3. High rates of vertical mobility.
4. Child neglect and misuse of youth.
5. Relative deprivation.
6. Criminalizing and comforting drugs.
7. Lack of external authority.
8. Mass media.
9. Laws without force.

The exact process by which these factors influence the decision to commit a crime, however, is not specified.

On an individual basis, the findings also generally confirm the media-stereotyped criminal. Researchers have often found an inverse relationship between low socioeconomic status and high crime rates (Nettler: 1974, p. 106). The number of such studies led Gordon (1967), after a review of the literature, to state "the association between delinquency and socioeconomic status is quite unambiguously strong" (Turner: 1970, p. 32). Wolfgang (1967) concurs and explains that the significantly higher homicide rate amongst the lower strata of a social organiza-

tion is due to a subculture where "violence is a requisite response" (p. 7). Because of discrimination and subordination by the ruling white majority, Wolfgang notes that violent crimes are even more frequent among blacks. However, most violent crime, and property crime as well, is intra-racial; black on black and white on white (Harries: 1973a). Finally, arrest statistics reflect these findings since most offenders are young, poor, uneducated, and disproportionately black. Nevertheless, there has been mounting discontent over the conclusion that crime is primarily a low-class phenomena.

Critical Theories: A New Perspective

While the majority of criminologists have devoted their time to the study of street crime, a new perspective has arisen which focuses "on the processes by which certain people and certain actions are defined as criminal" (Vold: 1979, p. 418). Basically, this approach recognizes that what constitutes serious criminal behavior is relative to those in power, resulting in the fact that various societies emphasize a different portion of a wide range of illegal actions. In the United States, therefore, this perspective has meant re-examining criminal law and questioning the belief that social class is intimately linked with crime.

The traditional position held by most sociologists is

referred to as Value-Consensus Theory, which asserts that criminal laws reflect those societal values which transcend the immediate, narrow interests of various individuals and groups, expressing the social consciousness of the whole society (Hills: 1971, p. 3).

On the contrary, Interest Group Theory does not perceive the criminal-law system as an expression of social values that reflects the needs of our entire society. Rather, they emphasize the power of select groups to shape the legal system to conform to a limited set of desires. For example, Quinney (1969, pp. 26-29) has formulated a socio-logical theory of interests based upon four propositions:

1. Law is the creation and interpretation of specialized rules in a politically organized society.
2. Politically organized society is based on an interest structure.
3. The interest structure of politically organized society is characterized by unequal distribution of power and by conflict.
4. Law is formulated and administered within the interest structure of a politically organized society.

When a larceny-theft or burglary of a few hundred dollars results in five to ten years of jail compared to a corporate violation which yields billions but only a small fine or administrative action, it is not difficult to understand why the interest theory has attracted attention.

Another example of the interest theory of law is

Reiman's Pyrrhic Defeat Theory (1979, pp. 17-18). Since the laws do prohibit corporate and white-collar crimes, Reiman places emphasis on the criminal justice system which he claims is "designed to fail" since those in power feel no compulsion to make changes. Although not a conscious conspiracy, Reiman reasons that the middle class identification of crime with the poor, and the failure of the system, actually benefits the wealthy. Reiman's stance, although controversial, is meant to get other criminologists to recognize that those who suffer most from crime are not in "positions to make and implement policy."

Concerning status, members of the critical perspective claim that the inverse relationship between crime and class position is the result of an inherently unfair judicial system that favors the privileged in our society (Tittle and Villemez: 1977; Platt: 1978; and Schwendinger and Schwendinger: 1977). Recent studies of sentencing patterns have provided some evidence for this view. Hagan (1977) found that minority offenders, particularly Indians, were sentenced much more severely by rural courts than in urban jurisdictions. A more detailed analysis with a geographical approach was provided by Harries and Brunn (1978) who note that socioeconomic status plays its largest role in the hiring of counsel and acquiring bail (p.

62). Self-report studies have also provided some evidence. One study by Wallerstein and Wyle (1947) "found that 91 percent of adult male subjects admitted to having committed at least one felony" (Krisberg: 1975, p. 62). Others, however, have noted that the types of felonies vary by social class. If crime, albeit various types of crime, is a common phenomena amongst all strata, then much of the present criminal theory is seriously short-sighted.

Another aspect of the critical perspective is Conflict Theory which asserts that much of criminal behavior is the expression of a group in conflict with the norms of the larger society. In reality, the conflict interpretation of crime is generally that taken by the Marxist group which views street crime as part of the working class' struggle against the bourgeois (Schwendinger and Schwendinger: 1977). Similarly, Platt (1978) urges that the problem of street crime be approached as

an important aspect of the demoralizing social relations and individualistic ideology that characterize the capitalist mode of production at its highest stage of development. (p. 33).

As discontent with the traditional stance has increased, the conflict debate has spread to more disciplines. Peet (1975) complains that the developing geography of crime is irrelevant because it deals only with the surface effects and not the root-cause which he attributes to monopoly-

capitalism. The controversy Peet has stirred up in the geography of crime is basically the debate between the radical-humanist approach and the positivist approach employed by most geographers and criminologists.

The conflict approach is perhaps defeatist in its lack of tolerance for other viewpoints. Herbert (1977) explains that the founding philosophy of marxism adopted by the new criminologists and radical geographers should be capable of compromise, particularly since evolutionary change in the field of crime requires "building upon existing concepts rather than attempting to replace them" (p. 232). In the same light, McDonald (1976) notes that there has been "almost no attempt to test propositions from either theory relative to the other" (p. 16). A new strategy for the study of crime, therefore, must at a minimum, defends its results against the opposing viewpoint.

In the present paper, the critical theory is recognized as having benefited the study of crime by making researchers more conscious of the validity of their results. The tenants of conflict theory, however, have been rejected for several reasons. First, the adherents of conflict theory have a simplified notion of social stratification. Social class to them consists of only the poor working class and the wealthy upper class. Second,

conflict theorists have repeated the same errors as the traditional criminologists except in reverse. High status crimes are consequently viewed as deserving the stiffest punishment while street crimes merely represent revolutionary struggle. Finally, it is difficult to imagine street crime as a conscious struggle against the bourgeoisie when most of these crimes are perpetrated against people of equally low status. What the present paper tries to achieve is an approach that covers the middle ground. To accomplish this it will be necessary to employ current methods to a wider classification to see whether the results of index crime apply to other categories. Likewise, explanation will be in terms of past research but with attention also paid to various propositions of the new perspective in criminology.

Chapter Three
DEVELOPMENT AND TESTING
OF A COMPREHENSIVE THEORY OF CRIME

Three essential elements of criminal theory according to McDonald (1976) are culturally defined norms of behavior, criminal sanctions, and criminal behavior as defined by law. While criminologists of the new perspective have generally stressed the importance of norms and sanctions in defining criminal actions, the bulk of criminal theory seeks to explain criminal behavior. As revealed in the last chapter, those theories that purport to explain criminal behavior (particularly of the low class variety) have run the gamut from those which identify individual defects to those which search for causes in man's physical and cultural environment. None of these theories, however, is wholly adequate. Moreover, essentially identical results, as produced by the myriad of ecological studies on low class crime, have yielded no corresponding consensus in explanation and interpretation. It is therefore hypothesized here that the lack of explanatory power attributed to these theories is a direct consequence of the fact that they are derived from only one section of the whole range of criminal activity. Hence, the purpose

of this chapter is to develop a more comprehensive approach to the explanation of criminal behavior, but not the production of a true and complete causal model which may never be developed.

The failure of most studies in crime has been the lack of explanation for the entire spectrum of crime. Criminologists and geographers alike have tended to either shove Part II crimes under the rug in their discussions, or have casually dismissed their importance. The exclusion of such crimes from empirical study may be partly due to the lack of statistics, but the absence of data itself reflects society's narrow focus on street crime (or, perhaps, that of those in power?). Nevertheless, meaningful analysis requires an attempt to deal with the problem. Abject poverty may be highly associated with armed robberies in the ghetto, but it would seem to have a small part in the causal structure of corporate crime. Thus, geographic and other studies of street crime must emphasize the point that the associations produced by their research are associations with low class crime alone, and not crime in general.

A comprehensive review of the nonspatial and nonempirical literature reveals at least four categories of crime that are crucial to a grasp of the total criminal scenario. The first is that which has been the most

intensively studied, index crime, or "crime in the street." A second category consists of the controversial "victimless" crimes in which gambling, commercial vice, and narcotics sale might fall. Although the offenders in this category might also be involved with street crime, the category is clearly distinct since participants of vice are often middle-class. It is this covert tolerance and yet refusal to legalize vice, that has allowed organized crime to infiltrate some areas (Inciardi: 1975). And while the debate over local norms rages over this class of crimes, police and legal systems are often obliged to keep it to minimum levels (Levin: 1977, p. 225). Individual white-collar property crime makes up the third category. No questions are raised as to the legality of the various crimes in this class, but sanctions imposed upon offenders are much less severe than those for index crime or vice. Furthermore, the exact nature of white-collar crime is difficult to pin down but a good definition might be

...an illegal act which is committed in the context of a lawful occupation, involves a breach of trust, does not rely on physical force, and has money, property, or power as the primary goals (Subcommittee on Crime: 1978, p. vi).

A final category would be that of corporate crime such as intentional violations of trust regulations or standards set by a commission such as the Pure Food and Drug Administration. While perhaps the least studied, corporate

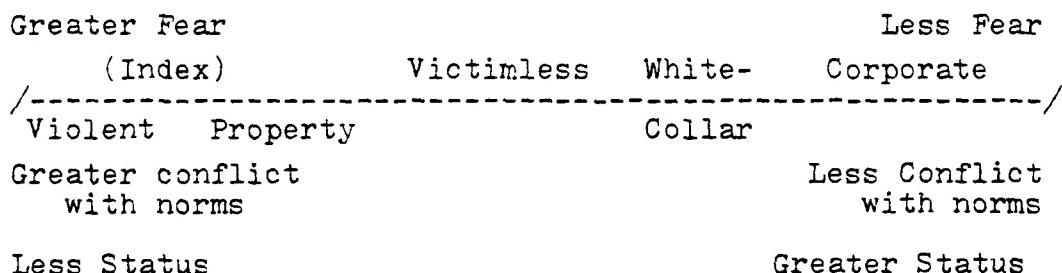
crimes have perhaps the most spatially extensive effects on society, and some might argue that they are also the most severe.

Crimes representative of each category have all been studied at one time or another. But no category has been as intensively analyzed as street crime. Whether the lack of attention given other categories is due to societal norms, public hysteria over street crime, or the status and power of higher class offenders matters little, the effect is still the same-- theories of criminal behavior lack widespread explanatory power. The societal norms that consider street crime an index to all crime have led to poor or nonexistent statistics on other crimes. For instance, corporate crime is the least represented in official statistics of all the categories, mostly because violations are handled by administrative boards and rarely by criminal courts. In fact, one could envision a continuum (see Fig. 1) in which street crime involves the highest number of reported occurrences, followed by organized crime, and then individual white-collar crime. At the opposite end would be corporate crime with hardly any available data. Similarly, another continuum could be devised in the same order to show how people fear these crimes. This range would reveal that people are most frightened of violent crime and least afraid of

corporate crime, even though the latter may be more likely to affect them. Implicit in this suggested scaling is that people often don't know they are victims of corporate or individual frauds and are more concerned with violence to their persons. It is fear of street crime, then, that causes people to leave the city, and this fact has been used to justify the great number of studies on index crime. Finally, one could suggest a scaling which attributes higher status to criminals in the white-collar and corporate categories since offenders of this type are less in conflict with societal norms and normally do not employ violence in their crimes. In addition, offenders in corporate and similar crimes are generally members of a higher socio-economic strata in society. Hence, there is a great deal of interaction between norms, fear, and status that yields the scaling depicted in Figure 1.

Figure 1

Continuum of Crime



If the scaling above is subjective at best and capable of considerable overlap, at least the general

tendencies exist. And because there are such differences between the categories of crime, it is rather pretentious to focus on only one subset in an attempt to develop theory about crime in general. So despite data deficiencies and the justifiable fear of street crime, a criminal study must span more than one category if meaningful conclusions are to be drawn.

In the thesis proposed herein, an attempt will be made to contribute to a broader theory of crime. Towards this end, it is proposed that environmental conditions be considered as another element to criminal theory in addition to McDonald's norms and sanctions. In this approach, however, behavior is not an element, but rather, a variable influenced by individual perceptions of norms, sanctions, and environment. Thus, the focus for the present research is between environment and a range of criminal behavior.

The present study also recognizes that while all criminal acts are a function of human behavior, behavior and decision-making are in turn influenced by societal conditions and opportunities. When conditions are such that conventional goals cannot be attained through normative behavior, then a criminogenic atmosphere is created. In such an atmosphere, a small subset of the population is more likely to turn to crime than would a person with

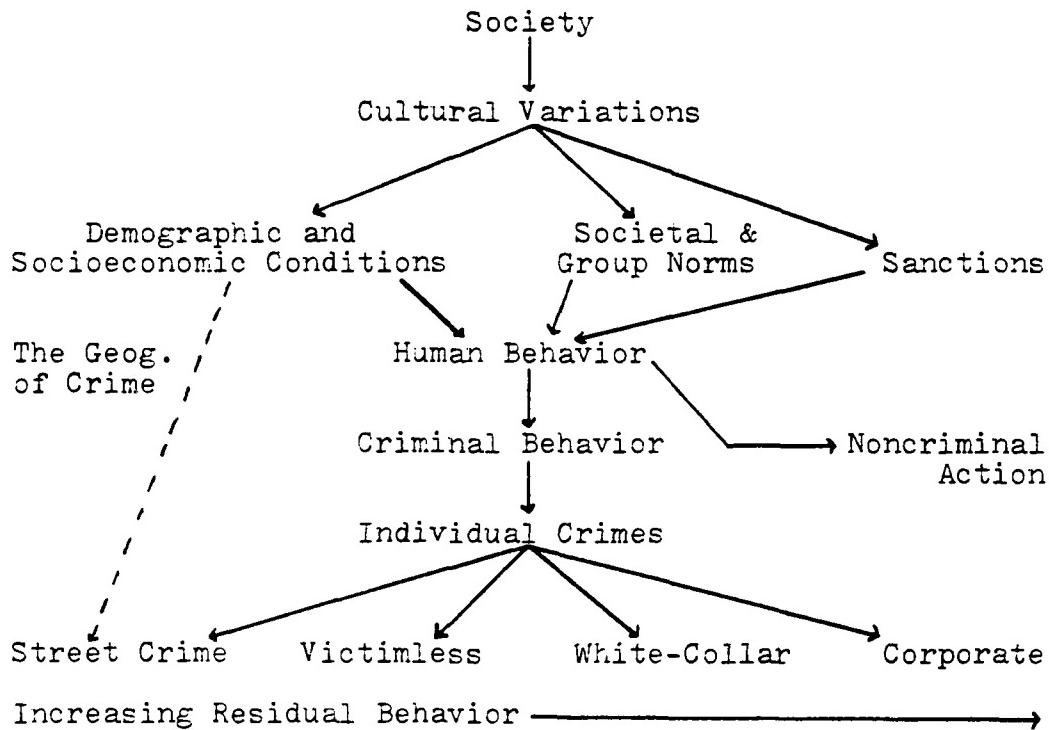
similar goals but in a more favorable situation. Such a theoretical approach is probabilistic in the sense that adverse societal conditions are more likely to produce a greater proportion of criminals, and consequently crime, than would occur under favorable circumstances. Adverse societal conditions in this theory, are the same ones found by past research to be relevant to street crime.

A second assumption of this approach to broader theory development is that as one moves up the range from street crime to corporate crime, the criminal is generally a member of higher socioeconomic status groups. Judging from the arrest statistics this is a fairly reasonable assumption. One could then hypothesize that the adverse conditions productive of street crime will explain much less of the variance in other crime data. In other words, it is expected in this study, that those variables which associate highly with street crime will explain much less of the statistical variation in higher status crimes. The residuals in each case may represent random criminal behavior taking place in the societal context but not influenced by it; and these residuals will be greater in high status crimes. In order to increase the level of explanation, it would then become necessary to investigate the influence of norms and sanctions.

A diagram of this theory, which might be called

environmental probability theory, is presented in Figure 2 on the following page. Society belongs at the top of this diagram and it represents the entirety of American culture. Culture, however, differs from region to region and therefore has a variable effect on environment, norms, and sanctions; the elements of theory which act on human behavior. Simply, one may say that society is responsible for the context in which people are placed, but within this context exist a large number of subcultural and local variations that affect individual behavior. But while varying behavior across subcultures has been documented, the theory proposed here assumes that the influence of a given culture is unimportant compared to the larger societal context in which the individual is placed. A complete test of this theory is not possible here, but an examination of the environmental element is. Because this element is expected to explain less variation as one moves from street crime to corporate crime, an increasing level of aggregate criminal behavior is left unaccounted. Consequently, "increasing residual behavior" demonstrates the study hypotheses, and represents the proportionately smaller amount of variation in behavior explained by environmental variables. The diagram also depicts the emphasis of most geographical and criminological studies of crime.

Figure 2
Elements of Criminal Behavior



Wisconsin: The Study Area

The proposed research design is quite simple; it is the inclusion of two new categories which is profound. Low class crime, victimless crime, and white-collar property crime are the three major categories to be analyzed, while corporate crime was discarded as an object of empirical study because of the complete lack of data. In addition, low class crime will be further divided into violent and property crimes in order to defuse incorrect generalizations about street crime as a whole. Each of the

resultant categories is to be represented by the crimes listed below.

Violent Crime-	Murder and Aggravated Assault
Property Crime-	Larceny and Auto Theft
Victimless Crime-	Gambling, Commercial Vice and Controlled Substances
White-Collar Crime-	Fraud and Forgery

The availability of data for these four categories of crime was the major reason for selecting Wisconsin as the area of study. Basically, the thesis will analyze existing data on the county (or intrastate) level for each of the nine crimes. The data available is in the form of arrest rates for each crime, and this was aggregated into the four categories above. The research design will also be applied to Wisconsin's largest city, Milwaukee, to provide a comparison for different levels of analysis. However, data for victimless and white collar crime are not available for the intraurban level. To check for problems with the use of arrest statistics, the rate for crimes known to police (violent and property) will also be used in the county level analysis. Statistical analysis will be twofold. First, the spatial incidence of the crimes will be mapped, and second, statistical techniques will be employed in an effort to associate socioeconomic variables with the various examples of criminal activity. If the association between these variables as the "status" of crime increases, then the hypothesis demonstrated by

"increasing residual behavior" in Figure 2 cannot be rejected at this time. Before proceeding to these analyses, however, it is necessary to examine the general nature of crime in Wisconsin, and the problems of a statistical approach to study.

Concerning index crime, perhaps the most general statement that may be made is that Wisconsin experiences a relatively low crime rate when compared to other states in the union. The low crime rate is also apparent when one compares only states from the North Central Region. Table 2 below reveals only a few Midwestern states with a crime rate less than that of Wisconsin's.

Table 2.

Regional Crime Variations, 1975

	<u>North Central States</u>	<u>Violent Crime*</u>	<u>Property Crime*</u>
East	Illinois	549.7	4832.3
	Indiana	332.8	4578.6
	Michigan	685.7	6114.6
	Ohio	408.0	4506.4
	<u>Wisconsin</u>	151.8	3823.9
West	Iowa	140.7	3768.0
	Kansas	278.2	4468.8
	Minnesota	207.0	4091.7
	Missouri	493.8	4904.0
	Nebraska	257.8	3356.2
	North Dakota	53.1	2284.1
	South Dakota	205.3	2533.7

*Crime rate per 100,000 population.

Source: Crime in the United States, 1975. FBI, Uniform Crime Reports, U.S. Dept. of Justice, pp. 50-52.

Whether victimless crime and white-collar crime are equally low in Wisconsin is subject to debate since only

a few states have adequate statistics on these crimes. Generally, however, one might expect to find higher Part II crime rates in more populous states.

Within Wisconsin, index crime is higher in urban areas than in rural areas as one would expect. Table 3 below shows that the highest rates of index crime are found in Standard Metropolitan Statistical Areas, then in other incorporated cities, and least of all, in rural zones.

Table 3.

Index Crime in Wisconsin, 1975

	<u>Population</u>	<u>Violent Crime</u>	<u>Property Crime</u>
SMSA	2,787,386	5,925	126,922
Other Cities	712,501	544	27,784
Rural	1,107,113	523	21,459

Rate per 100,000

SMSA	212.6	4553.4
Other Cities	76.4	3899.5
Rural	47.2	1938.3

Source: Crime in the United States, 1975. FBI, Uniform Crime Reports, U.S. Dept. of Justice, p. 65.

Thus, it would appear that larger populations create an atmosphere more conducive to crime. However, it is very likely that population size is only indicative of the presence of other confounding variables such as urban

ghettos or heterogeneity. A simple correlation was therefore performed to see how crime related to increasing population size. Using the number of violent and property crimes in cities over 10,000 for Wisconsin ($N = 58$) against the city size, the coefficient of determination for violent crime was $r^2 = .9494$. For property crime, city size explained 97.73% of the statistical variation. Judging from this exercise, a logarithmic transformation of the data is not necessary. However, it points out that population should not be used as a variable because we know too well that crime increases where there is a greater assemblage of people and property. What is of interest is the factors beyond population which produce variations in crime. For this reason, the maps in this study are displays of rates, and crime rates constitute all dependent variables.

Another means of examining general patterns of crime in Wisconsin is to search for intercorrelations between the various categories of crime. The results of this analysis are shown in Table 4 on the following page. The relationships revealed in the chart were not very strong in any case. Surprisingly, auto theft correlated moderately high with murder and aggravated assault ($r = .61$ and $.64$ respectively) which indicates a similar pattern of occurrence between auto theft and violent crimes in Wis-

Table 4.

Intercorrelations Between Crime Offences

<u>Crime</u>	1.	2.	3.	4.	5.	6.	7.	8.
1. Homocide	1.000							
2. Aggravated Assault	.372	1.000						
3. Theft	-.051	.252	1.000					
4. Auto Theft	.610	.641	.342	1.000				
5. Vice and Gambling	.011	.328	.365	.226	1.000			
6. Controlled Substances	.106	.403	.525	.421	.318	1.000		
7. Forgery	-.120	.095	.625	.078	.305	.251	1.000	
8. Fraud	-.109	.152	.263	-.004	.290	.245	.523	1.000
Mean	5.64	26.51	409.2	57.50	2.41	154.0	20.25	48.37
S.D.	22.2	30.6	221.3	50.4	8.35	119.9	19.0	57.7

Calculations by author.

consin counties. The arrest data were also put to a factor analysis to check for other patterns and to see if the crime categories would load onto separate factors. Pyle, performing this procedure on index crime in the North Central States, found that burglary loaded highly with the FBI's four violent crimes (murder, assault, rape, and robbery) leaving larceny and auto theft as representative of property crime (1974, p. 49). On the other hand, Harries' typology of SMSAs across the United States resulted in factor loadings that placed rape, robbery, larceny, auto theft, and burglary in a general crime factor, with only assault and murder falling into the violent crime factor (1973b, p. 99). Applying this technique to the same data that yielded Table 4, gives the factor matrix presented below.

Table 5.

Structure of Crime Factors

Variable	Factor Most Strongly Associated with Variable		Communality
	General Crime	Violent Crime	
1. Homocide		.774	.658
2. Agg. Assault		.776	.650
3. Theft	.782		.656
4. Auto Theft		.900	.832
5. Vice & Gamb.	.580		.392
6. Cont. Subs.	.557		.519
7. Forgery	.825		.691
8. Fraud	.686		.485
% of total variance	31.9%	29.1% = 61.0% Total	

The matrix does not imply that auto theft is a violent crime, however, only that the pattern of occurrence is similar to that of murder and assault. Likewise, the variables which loaded highly on the general crime factor only exhibit similar spatial characteristics. Comparing these results to Pyle's and Harries' one can only conclude that there is little consistency in the spatial variation between offences at different levels of analysis. Consequently, the results of this study are applicable to the state of Wisconsin alone and should not be inferred as valid for other areas or scales of analysis.

One final point on general crime characteristics of Wisconsin is that the thermic law of delinquency does not seem to apply. For instance, the greatest number of reported violent crimes fell in the quarter from October to December. Also in contrast to the thermic law was the fact that the quarter with the most reported property crimes was that from July to September. The empirical correlations found by other researchers, therefore, do not apply to the state in question. Kaplan's (1960) admonishment that geographers not casually reject the significance of the thermic law of delinquency is rejected in these circumstances.

The Problem with Crime Statistics

Most research in criminology is deficient in a

variety of ways. While critics have pointed to the extreme emphasis on street crime, perhaps the most commonly leveled criticism is that findings are invalid because criminal statistics are not representative of the total population of crime. Since the attack on statistics strikes at the heart of this thesis it is necessary to address the problem.

The brunt of the attack on criminal statistics lies with the fact that they do not always measure crime accurately. The evidence by critics in this area is both far-reaching and severe. For example, many crimes are not reported, recorded, or even discovered, and are at best, only a poor index of the actual number of crimes committed. Moreover, there is no constant relationship between the crime index and the true rate of crime since it is generally recognized that the more serious the crime, the more likely it is to be reported and/or discovered and recorded. Concerning the Uniform Crime Reports, Kowalski, Dittmann, and Bung (1980, p. 5) have identified major sources of "elasticity" in the misclassification of crimes by police, in varying legal definitions for reporting jurisdictions, and in the incomparability of data over time. Unfortunately, the situation is not likely to improve much since, as Cressey observed in 1957, criminal statistics are collected for administrative rather than

scientific purposes.

The end result of the failure to adequately measure crime is the inability to accurately identify the universe of crime. Consequently, no one can say for certain if crime is actually on the rise, since no one actually knows how much crime there is in the first place. Kamisar (1972, p. 245) notes that the bulk of the crime wave in the late sixties was simply due to the public "reporting a much higher percentage of actual crime than ever before." Similarly, more efficient police practices and changing definitions can lead to a 'statistical crime wave.' Wisconsin, for instance, expanded its definition of Larceny in 1973 to include thefts under \$50 resulting in a large jump in this type of felony. But if the crimes known to police are not a true index, this is especially so as administrative procedures remove one even further from the reported crime. Thus, a correspondingly smaller percentage of actual crime is captured as one moves from police records to arrest data, and from court to prison statistics. Nevertheless, official crime statistics are a genuine part of the criminal process and reflect both the incidence of crime in our society as well as the administration of criminal law.

Given the importance of crime statistics, the researcher must be aware of the potentialities of his

own data. After granting that biases exist, research can still be conducted using criminal statistics if one makes the assumption that, "if that part of an observed relationship which is merely due to slipshod methods of collecting statistics were eliminated, a real difference would remain" (Cressey: 1957, p. 233). Moreover, one must take the position of Oosthoek (1978, p. 11) that "straight-forward empirical laws are either not obtainable or (are) trivial in their scope of prediction." Instead, Oosthoek claims that the social scientist in this field must resort to searching for "tendency" or "quasi-general" laws within the bounds of rational use for the given set of statistics. More simply, the research design must pay close attention to its objectives and the availability of other means to achieve these objectives. With these limitations in mind, it is possible to proceed with the present research.

Methodology

The basic strategy of this paper is to select a set of variables that have generally been associated with street crime and then see if they relate as well to the other types of crime identified earlier in the chapter. In this manner, it is possible to test the environmental element of Figure 2 with crimes of varying status. The proposed research, therefore, will incorporate factor analysis and stepwise multiple regression to seek out the

underlying dimensions of various types of crime. More specifically, principal components analysis will be applied to the standardized scores of variable data in order to achieve a parsimonious description, and to create mutually orthogonal vector columns in the data matrix. By orthogonalizing the data, the assumption of multiple regression that the predictor variables are independent and uncorrelated is thereby satisfied. But before proceeding to regression analysis, the results of the principal components analysis will be further transformed via a varimax rotation in order to search out any underlying dimensions in which variable clusters are located, while retaining the essential orthogonality of the data. The stepwise multiple regression will simply determine which of the resultant factors account for the greatest variation in the distribution of the crime data, and discard those with partial correlations below a specified level. These statistical manipulations were performed at the Madison Academic Computing Center (MACC) on the Statjob packaged program series.

While statistical techniques only reveal the association between variables, social scientists must not be afraid to make the leap to causal inference if theory is ever to be developed. Consequently, a form of one-way causal analysis, known as path analysis, will be employed

to structure the direction of the related variables within factors. It is stressed, however, that a non-deterministic approach to interpretation is taken with this technique, and it is included mainly because it is more susceptible to refutation than are the general results produced by other methodologies. Because a causal model can be structured in $n!$ ways, the models in this study may not be the most correct. Continued revisions are possible and each model may be tested by searching for associations between nonlinked variables. After these procedures are completed for both Wisconsin and Milwaukee, an attempt will be made to incorporate the results into the broader schema of Figure 2.

Chapter Four

WISCONSIN: AN INTRASTATE ANALYSIS

In the previous chapters, attention was drawn to the notion that traditional criminology and the geography of crime spend too much effort on the study of street crime. Moreover, much of the traditional criminological analysis has been applied to the development of deterministic, scientific models of criminal behavior. The deterministic approach to explanation is even more characteristic of ecological analysis where investigators have often overstepped the boundary between causality and association. In general, the direction of ecological research has been to link various demographic, socioeconomic, and land-use conditions to aspects of street crime. The dilemma of this type of analysis is that no scope is allowed for human choice. That is, the deterministic models of criminal behavior attempt to seek out universal causes such that any criminal act can be traced to a set of antecedent conditions. Thus, deterministic models reject the assumptions of legal and common-sense notions of human freewill. Because human freewill is considered a major factor in criminal behavior by this paper, the object of the present chapter is to demonstrate that deterministic

models may be invalid since they do not apply universally to the full spectrum of criminal activity.

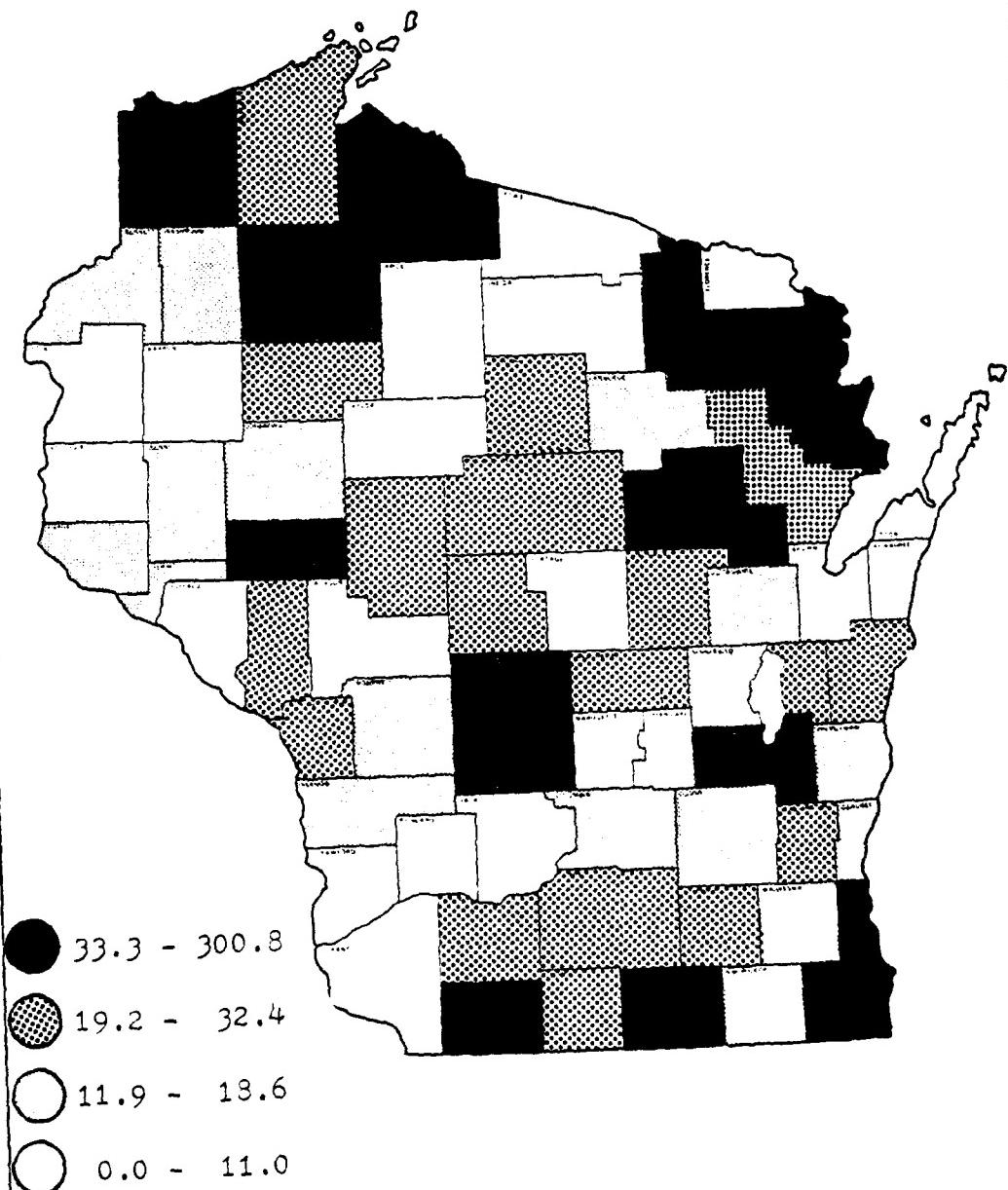
No attempt is made here to provide an all-encompassing theory of criminal behavior, but rather, this chapter is an indirect test of the perspective which views criminal behavior as a probabilistic outcome given the socio-economic conditions, norms, and sanctions characterizing any particular subculture. The test is indirect because of the difficulty in analyzing any set of criminal data and the consequent greater difficulty in testing one's theory. For this paper, norms, sanctions, and human choice are the unknowns for which no data exists. Instead, the analysis can only consider socioeconomic conditions and arrest data for four categories of crime: violent, property, victimless, and white-collar. If the deterministic models presented for street crime represent a set of universal causes, then the same set of conditions should be statistically associated to the same degree with other types of crimes. Moreover, all unexplained variation should be seen as due to external factors not yet identified. The point of this chapter, then, is to demonstrate that this is not very likely. On the contrary, it is more likely that a very different set of conditions precipitates the decision to commit a "higher status" crime. Furthermore, in the subjective, interpretive

approach adopted here, it is assumed that much of the variation in criminal behavior not accounted for by the given set of variables is to be found in the norms and sanctions which influence human decision-making. This decision-making part of the model is important since both law-abiding citizens and criminals are subjected to the same set of societal conditions, norms, and sanctions. Ultimately, however, it must be up to the individual to choose his course of action. The goal of this analysis, therefore, is merely to provide a qualitative understanding of the particular patterns behind various criminal choices.

The first step of the analysis is to map the spatial distribution of the arrest rates for each of the four categories. This procedure was accomplished in the following four pages by constructing choropleth maps which utilize county boundaries, thereby enabling one to note at a glance the spatial variations in the particular crime for Wisconsin. At the county level of analysis, one would expect greater similarities due to the degree of aggregation. However, an examination of the four maps indicates that this is not the case. While there is a tendency for the largest arrest rates to appear in the more heavily urbanized southeastern counties, the degree to which this is so varies. Arrest rates for violent

Map 1.

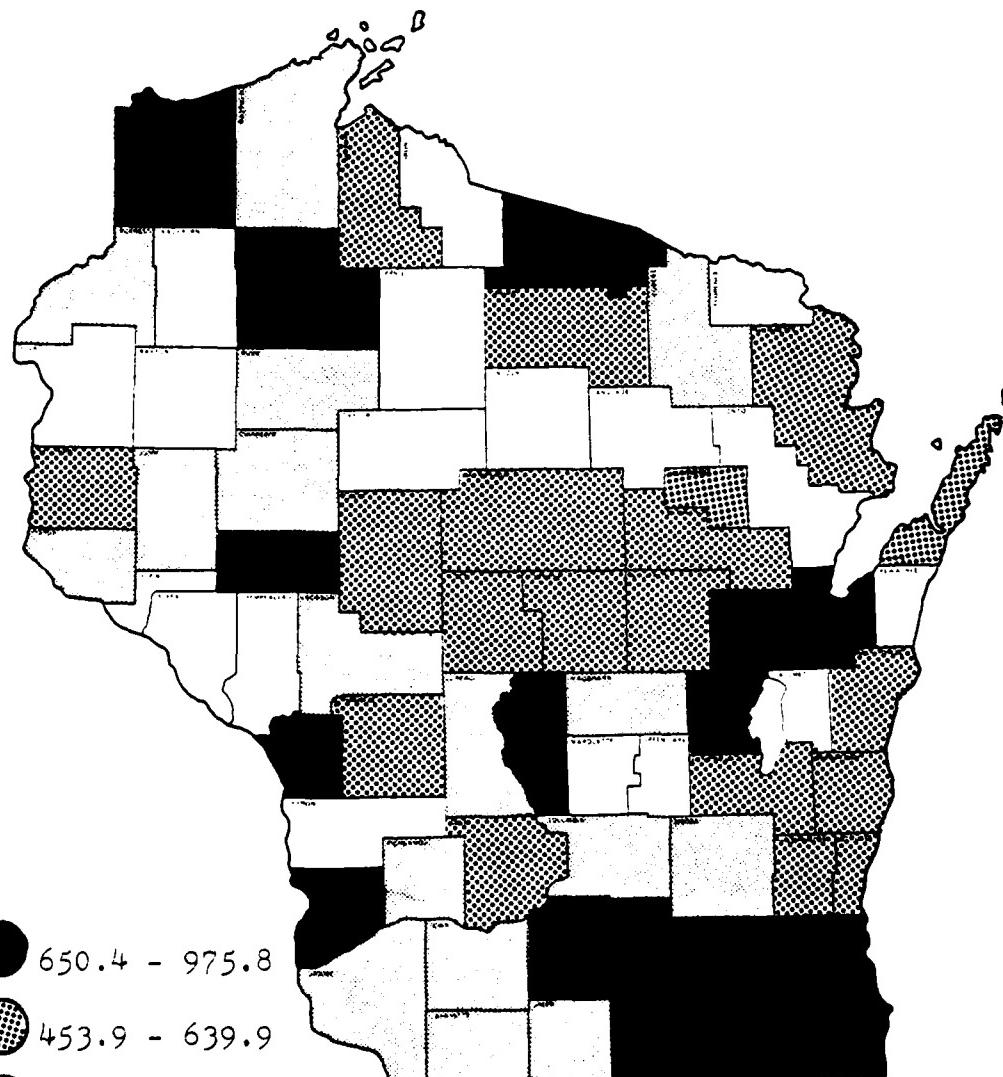
Violent Crime Arrest Rate per 100,000 Inhabitants
by County, Wisconsin, 1975



Note- Violent Crime = Criminal Homocide + Agg. Assault

Map 2.

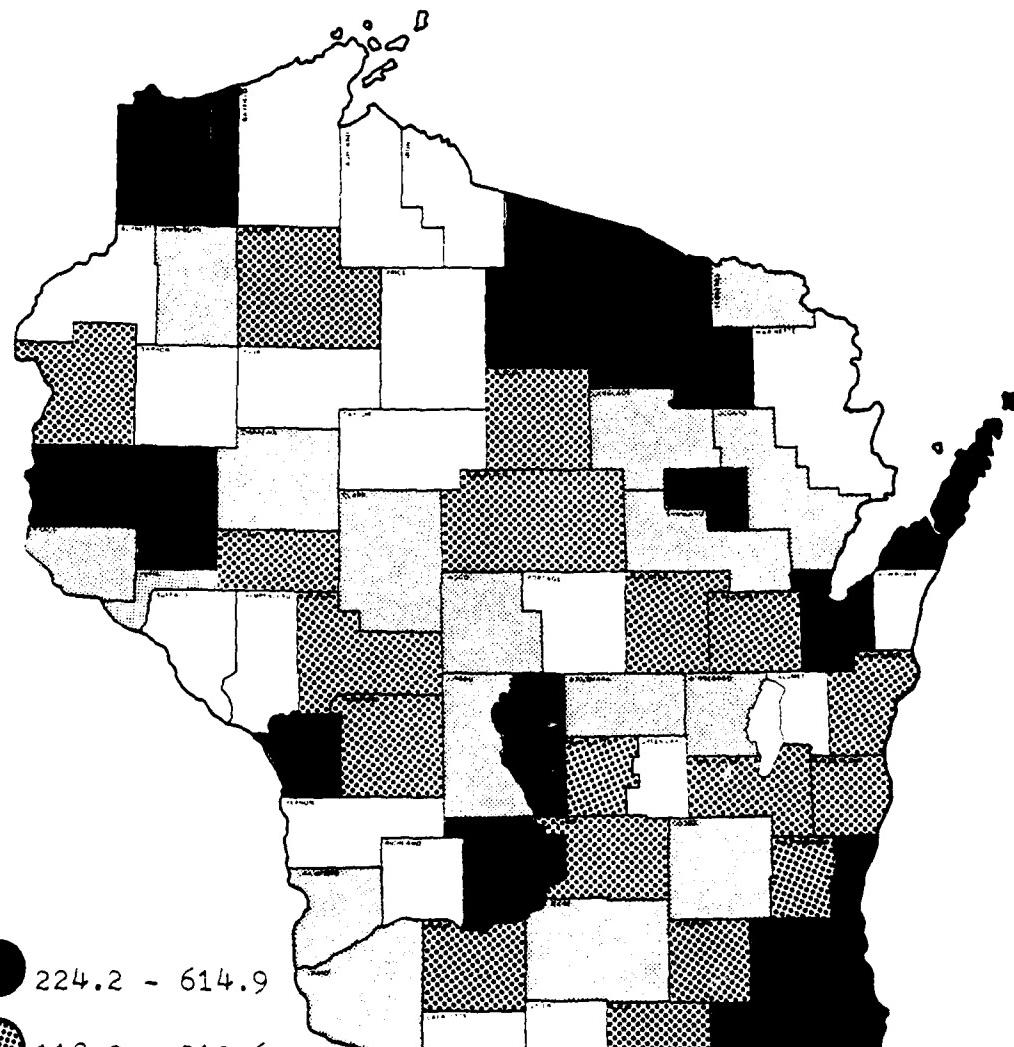
Property Crime Arrest Rate per 100,000 Inhabitants
by County, Wisconsin, 1975



Note- Property Crime = Theft + Automobile Theft

Map 3.

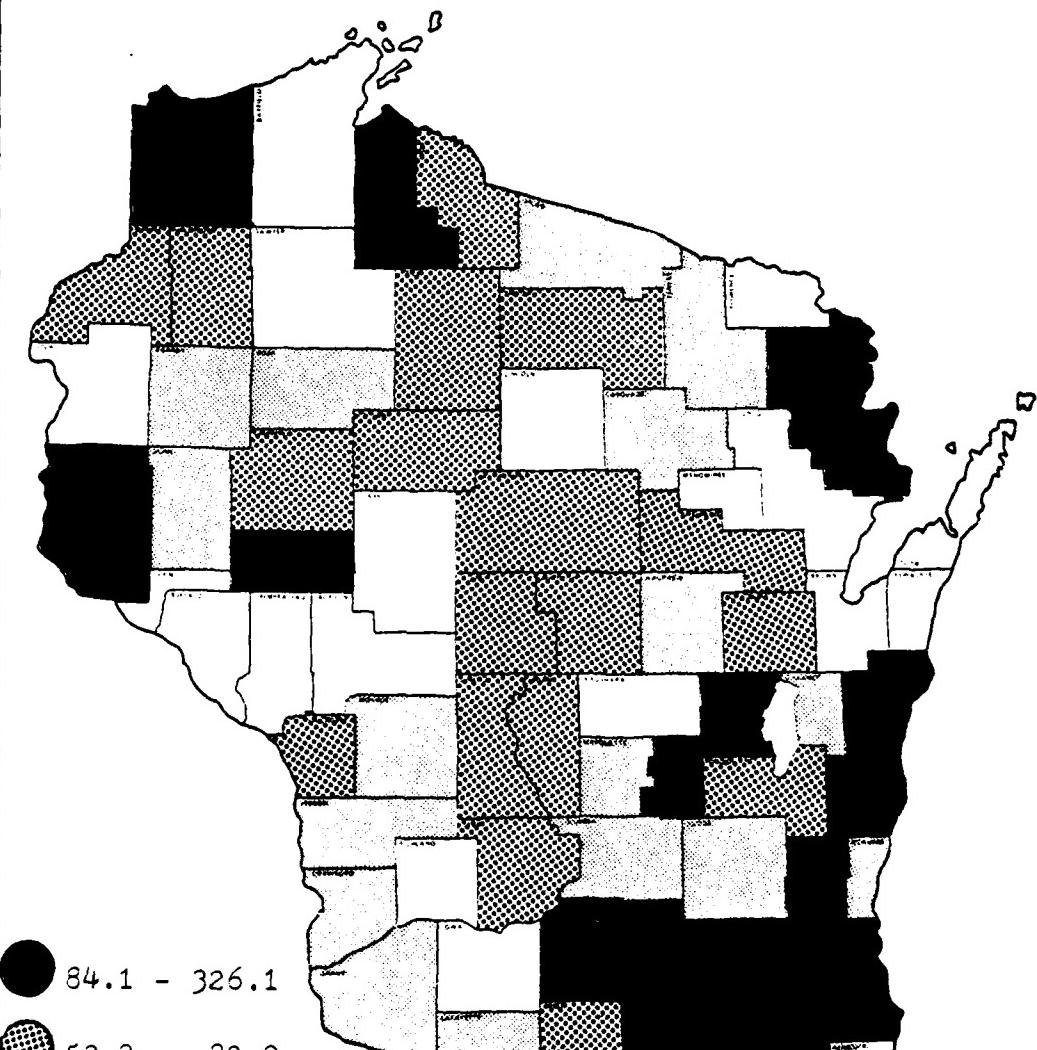
Victimless Crime Arrest Rate per 100,000 Inhabitants
by County, Wisconsin, 1975



Note- Victimless Crime = Commercial Vice + Gambling +
Controlled Substances

Map 4.

White-Collar Crime Arrest Rate per 100,000 Inhabitants
by County, Wisconsin, 1975.



Note- White-Collar Crime = Fraud + Forgery

crime, for instance, appear to be more scattered than say, arrest rates for fraud and forgery which appear to be highest near urban concentrations (note- although St. Croix and Pierce counties are not very urbanized, they are quite near Minneapolis-St. Paul). Similarly, property crime tends to have the largest arrest rates in counties with a fairly large urban center. On the contrary, arrest rates for victimless crime are often high in rural counties. Because the victimless category of crime was dominated by arrests for controlled substances, this peculiarity may be due to the emphasis and priorities of local police forces. Thus, complete reliance upon the cartographic tool for basing conclusions about crime is unacceptable.

Each of the seventy-two counties of Wisconsin differ by many more aspects than the level of urbanization. More detailed analysis therefore requires an examination of many variables although maps may aid in interpretation. Gwynn Nettler elaborates (1974, p. 107).

Locating crime is a step towards explaining it, but the location is not the explanation. Particularly, we should avoid confusing the location with the cause. ... The solution to this problem is an ecological analysis which examines areas of a country or zones within a city for the association between measures of social position and criminal activity.

For the purposes of this paper, the variations between the

four categories of crime and societal conditions may be best explored by factor analysis and multiple regression.

Although the model of criminogenesis advocated herein is probabilistic, a search for associations between societal conditions and criminality is not invalid. Rather, an understanding of environmental correlates can increase our knowledge of the underlying patterns of criminal choice.

The second step of analysis, then is to choose a set of variables which normally associates very highly with examples of street crime and then determine if the association with higher status crimes is equally high. Principal components analysis is employed to break the variables down into a lesser number of underlying but independent dimensions which may then be regressed against the four crime categories. The results of this analysis may then be used to make a statement about the research hypotheses.

The set of variables for the county-level analysis are listed in Table 6 on the following page. Data was available for each county in Wisconsin and was extracted from either the Wisconsin Statistical Abstracts (1979) or the County and City Data Book, 1977. Variables were chosen on the basis of past research which generally revealed some positive or negative association with street crime (Harries: 1973b, Turner: 1970, and Corsi and Harvey:

Table 6.

Variables for County-Level Analysis

1. Population per square mile, 1970.
2. % 65 years old and over, 1975.
3. % urban, 1970.
4. % black, 1970.
5. % foreign stock, 1970.
6. % net migration, change from 1970-1975.
7. Death rate, 1975.
8. Divorce rate, 1975.
9. % unemployed, civilian labor force, 1970.
10. % of civilian labor force employed in manufacturing, 1970.
11. Physician rate per 100,000, 1975.
12. Per capita income, dollars, 1974.
13. % of families with money income below 125% of the poverty level, 1969.
14. % of families with money income \$15,000 and over, 1969.
15. % owner-occupied housing, 1970.
16. % of occupied units lacking some or all plumbing facilities, 1970.
17. % of occupied units with 1.01 or more persons per room, 1970.
18. Median value owner-occupied single family dwellings, 1970.
19. % of total Wisconsin Population under 18 years, 1970.
20. Relative Deprivation Index, ratio of the % distribution of family income, \$15,000-24,999 over than under \$2,000.
21. % distribution of education level attainment for males 25 and over with four or more years college, 1970.
22. % distribution of education level attainment for males 25 and over with Grade 7 and below, 1970.
23. Male unemployment rate, 1970.
24. % distribution of male (age 14+) personal income under \$4,000 for Wisconsin residents, 1969.

1975). Thus, variables in Table 6 represent indices of poverty, education, income, urbanization and related land-use and demographic measures.

The results of the principal components analysis are presented in Table 7, the correlation matrix, and Table 8,

VARIABLE NO.

1	- .160	- .143	- .143	- .143	- .143	- .143	- .143	- .143
2	- .250	- .177	- .177	- .177	- .177	- .177	- .177	- .177
3	- .132	- .242	- .126	- .126	- .126	- .126	- .126	- .126
4	- .214	- .172	- .172	- .172	- .172	- .172	- .172	- .172
5	- .303	- .311	- .571	- .571	- .571	- .571	- .571	- .571
6	- .410	- .571	- .720	- .720	- .720	- .720	- .720	- .720
7	- .210	- .172	- .075	- .075	- .075	- .075	- .075	- .075
8	- .250	- .177	- .177	- .177	- .177	- .177	- .177	- .177
9	- .132	- .242	- .126	- .126	- .126	- .126	- .126	- .126
10	- .214	- .172	- .172	- .172	- .172	- .172	- .172	- .172
11	- .303	- .311	- .571	- .571	- .571	- .571	- .571	- .571
12	- .410	- .571	- .720	- .720	- .720	- .720	- .720	- .720
13	- .210	- .172	- .075	- .075	- .075	- .075	- .075	- .075
14	- .250	- .177	- .177	- .177	- .177	- .177	- .177	- .177
15	- .303	- .311	- .571	- .571	- .571	- .571	- .571	- .571
16	- .410	- .571	- .720	- .720	- .720	- .720	- .720	- .720
17	- .058	- .312	- .218	- .218	- .218	- .218	- .218	- .218
18	- .370	- .057	- .723	- .723	- .723	- .723	- .723	- .723
19	- .052	- .606	- .041	- .024	- .024	- .024	- .024	- .024
20	- .244	- .050	- .034	- .234	- .234	- .234	- .234	- .234
21	- .272	- .545	- .609	- .227	- .227	- .227	- .227	- .227
22	- .188	- .489	- .500	- .134	- .134	- .134	- .134	- .134
23	- .121	- .207	- .343	- .048	- .048	- .048	- .048	- .048
24	- .329	- .545	- .734	- .306	- .306	- .306	- .306	- .306

VARIABLE NO.

13	14	15	16	17	18	19	20
13	1.000						
14	- .813	1.000					
15	.460	- .527	1.000				
16	.917	- .727	.449	1.000			
17	.621	- .304	.079	.680	1.000		
18	- .795	.935	- .548	- .752	- .296	1.000	
19	.175	.163	.061	.225	.689	.076	1.000
20	- .686	.912	- .393	- .588	- .171	.897	.232
21	- .617	.764	- .583	- .618	- .266	.618	.105
22	.637	- .700	.580	.674	.291	.742	.015
23	.709	- .581	.191	.765	.600	.504	.059
24	.888	- .820	.437	.810	.365	.811	.148

Table 7.

4	5	6	7	8	9	10	11	12
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1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
.122	.195	.412	.133	.102	.269	.023	.508	1.000
-.020	-.480	-.412	-.133	-.102	-.269	-.023	-.508	-.890
-.136	.480	-.412	-.133	-.102	-.269	-.023	-.461	-.934
.375	.120	.237	.433	.142	.324	.219	.467	.463
-.040	.291	-.157	-.427	-.142	-.324	-.540	-.390	.934
.271	-.128	.360	-.427	-.142	-.255	.645	.413	.566
.241	-.075	.226	-.363	-.255	-.593	.217	-.168	.810
.383	-.134	.563	-.620	-.255	-.275	.679	-.251	-.415
-.213	.104	-.431	.525	-.060	-.470	-.450	.174	-.924
.308	-.310	.583	-.712	-.165	-.470	-.450	.434	-.016
-.571	.242	-.141	.445	-.702	-.258	-.450	.368	.805
-.211	.100	-.315	.471	-.520	-.179	-.453	.481	.751
-.023	-.186	-.070	-.471	-.520	-.232	-.361	.095	.701
.309	-.259	.692	-.560	-.663	-.424	-.450	-.136	-.573
-.029	-.511	.004	-.575	-.577	-.263	-.450	-.191	-.205
.238	-.204	.560	-.441	-.491	-.050	-.957	-.618	-.842
-.227	-.096	.575	-.347	-.347	-.267	-.607	-.390	-.390
-.138	.318	-.133	-.604	-.399	-.267	-.607	-.618	-.618
-.048	.244	-.174	-.399	-.399	-.267	-.607	-.618	-.618

16	17	18	19	20	21	22	23	24
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1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
.680	-.296	.076	1.000	1.000	1.000	1.000	1.000	1.000
-.752	.687	.897	.232	.738	.644	.675	.449	.632
.225	.171	.818	.105	.105	.015	.418	.357	.539
-.588	-.266	-.742	-.742	-.742	-.504	-.764	-.539	-.627
-.618	.291	-.504	-.059	-.059	-.811	-.140	-.449	-.632
.674	.600	-.811	-.140	-.140	-.140	-.140	-.627	-.627
.765	.365	-.140	-.140	-.140	-.140	-.140	-.627	-.627
.810	-.140	-.140	-.140	-.140	-.140	-.140	-.627	-.627

Table 8.

Rotated Factor Matrix

<u>Var./Factor</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Communality</u>
1. Density	.045	-.107	.172	.009	.882	.821
2. Over 65	-.479	.076	-.317	.745	-.167	.918
3. % urban	.468	-.298	.476	-.179	.435	.755
4. % black	.079	-.017	.127	.038	.923	.875
5. % foreign	.044	.199	-.202	.755	.183	.686
6. Migration	.828	.004	.209	-.030	-.216	.777
7. Death rate	-.477	.246	-.295	.679	-.101	.846
8. Divorce	.365	.201	.432	.217	.361	.538
9. Unemployed	-.118	.895	-.035	.217	-.013	.864
10. Manufact.	.627	-.138	-.366	-.294	.374	.772
11. Doctors	.148	-.161	.780	-.004	.181	.689
12. PC Income	.691	-.509	.360	-.052	.298	.958
13. Poverty	-.538	.715	-.288	-.063	-.161	.913
14. Wealth	.653	-.499	.362	-.255	.190	.908
15. Own home	-.104	.141	-.692	.191	-.554	.852
16. Plumbing	-.386	.772	-.353	-.095	-.144	.899
17. Crowding	-.043	.706	-.195	-.607	.067	.912
18. Home value	.719	-.417	.427	-.179	.181	.939
19. Under 18	.121	.140	-.265	-.885	.029	.889
20. R.D. index	.785	-.327	.247	-.237	.133	.858
21. College+	.539	-.227	.709	-.034	.071	.852
22. Grade 7-	-.368	.410	-.628	.177	-.012	.730
23. Men unem.	-.105	.949	-.057	.080	-.004	.922
24. Poor men	-.617	.613	-.126	.158	-.308	.891
Eigenvalue	11.329	3.172	2.565	1.636	1.364	
% of total variance	21.9%	20.9%	15.4%	13.4%	12.0%	= 83.6%

the rotated factor matrix. The degree of intercorrelation present among the variables is demonstrated by the correlation matrix and suggests that factor analysis is an appropriate technique for achieving concise descriptions of the patterns of associations among this set of observations. An examination of the highest correlation coefficients is revealing but not surprising. Both a college

education and high income were strongly correlated with housing value ($r = .897$ and $.935$ respectively) reinforcing the belief that education leads to higher socioeconomic status. Population density and the % black of counties were also highly associated at $.873$ indicating that most blacks in the state are located in urban centers. Finally, despite Wisconsin's agricultural wealth, per capita income was correlated with the % of the county which is urban at $.770$. Many other strong correlations can be found in Table 7 and this was reflected in the factor loadings. The dimensions which emerge index the differences between urban and rural counties in income, occupation, and education that have been revealed by other studies at this scale (Rees: 1971, p. 227). In particular, variable 3, the percent of the county which is urban, shows higher loadings on Factors 1, 3, and 5 while Factors 2 and 4 could be said to be rural due to negative loadings. No other factors emerged with eigenvalues greater than one. To determine the differences within urban and rural factors it is necessary to examine the loadings of the other variables.

Urban wealth perhaps best describes Factor 1 with the most significant loadings being: % net migration (.828), manufacturing employment (.627), income (.691), income above \$15,000 (.653), housing value (.719), relative

deprivation index, RDI (.785), and income under \$4,000 (-.617). The positive loadings on income and the negative loading on low income indicate a dimension of wealth. Factor 1 further suggests that manufacturing may be the source of income and that wealth has resulted in in-migration. Finally, the relative deprivation index points out that little poverty is described by the factor. However, since median-value housing and high income loaded strongly on this factor, one might suspect that this factor is more representative of the suburbs than the inner cities of Wisconsin counties.

In contrast to Factor 1, Factor 2 is easily interpreted as a dimension of rural poverty. Significant loadings on Factor 2 are: % unemployed (.895), poverty level income (.715), units lacking plumbing (.772), crowding (.706), and male unemployment rate (.949). Variable 15, % owner-occupied housing loads positively on this factor (.141) but the high loadings would suggest that these structures are often in a deteriorated state and crowded. If urban wealth is associated with crime by reason of opportunity, then rural poverty may be associated with crime out of necessity.

Factor 3, although similar in many ways to Factor 1, is a description of truly urban life, but not the six variables which load highest

on Factor 3 are: % urban (.476), divorce rate (.432), the physician rate (.780), owner-occupied housing (-.692), college education (.709), and education less than Grade 7 (-.628). Thus, one might assume that this factor has uncovered a dimension more urbane than that in Factor 1.

The fourth factor has been interpreted here as a rural ethnicity factor which differs substantially from the rural poverty that was apparent in Factor 2. The highest variable loadings were for: % 65 yrs and older (.745), % foreign stock (.755), death rate (.679), % under 18 (-.885). Because most crimes are committed by offenders in their twenties and thirties, of all the factors, one would expect the least association of rural ethnicity with crime.

Lastly, Factor 5 was seen as a simple dimension of urban density. The two variables with high loadings on this factor were population per square mile (.882) and % black (.923). Hence, this dimension notes the fact that most of Wisconsin's black population resides in urban centers. Looking further, however, one notes that income and education are lowest here for the urban dimensions and this might indicate that Factor 5 will associate highly with crime. It does not mean that blacks are committing these crimes since generalizations at the county level do not necessarily apply to the individual level.

Causal Modeling

Before regressing the factor scores for each county against the arrest rates, it is possible to structure the direction of the most significant variables within each factor. To do this a form of causal modeling known as path analysis was employed. When using this technique, the researcher constructs a hypothesized model that reveals the interrelationships between the variables and the dependent variable (the factor itself in this case). In order to test the hypothesized structure, equations are written for each variable and modeled into a regression analysis. The fundamental theorem of path analysis, $r_{ij} = \text{the summation of } p_{iq} r_{jq}$, "where i and j denote two variables in the system and the index q runs over all variables from which paths leads directly to variable X_i ," allows one to determine the strength and direction for each link by computing the standardized regression coefficients for each equation (Guest: 1974, p. 269). In other words, the total correlation (r_{ij}) between one dependent variable and a number of independent variables can be found by summing the products of the path coefficient (p_{iq}) and the correlation coefficient (r_{jq}) along the paths leading to the dependent variable. While the approach is far from foolproof, it is theoretically more seductive than constructing all possible paths and then eliminating those

links with weak coefficients (the 'fishing method'). Moreover, this technique is realistic in that it recognizes that most variables are not independent, but rather, may have both direct and indirect effects on the dependent variable. Combined with the cartographic and other statistical investigations outlined above, path analysis helps to reduce the possibility of erroneous generalizations and increases insight into the relationships between the four criminal categories and the selected socioeconomic indicators.

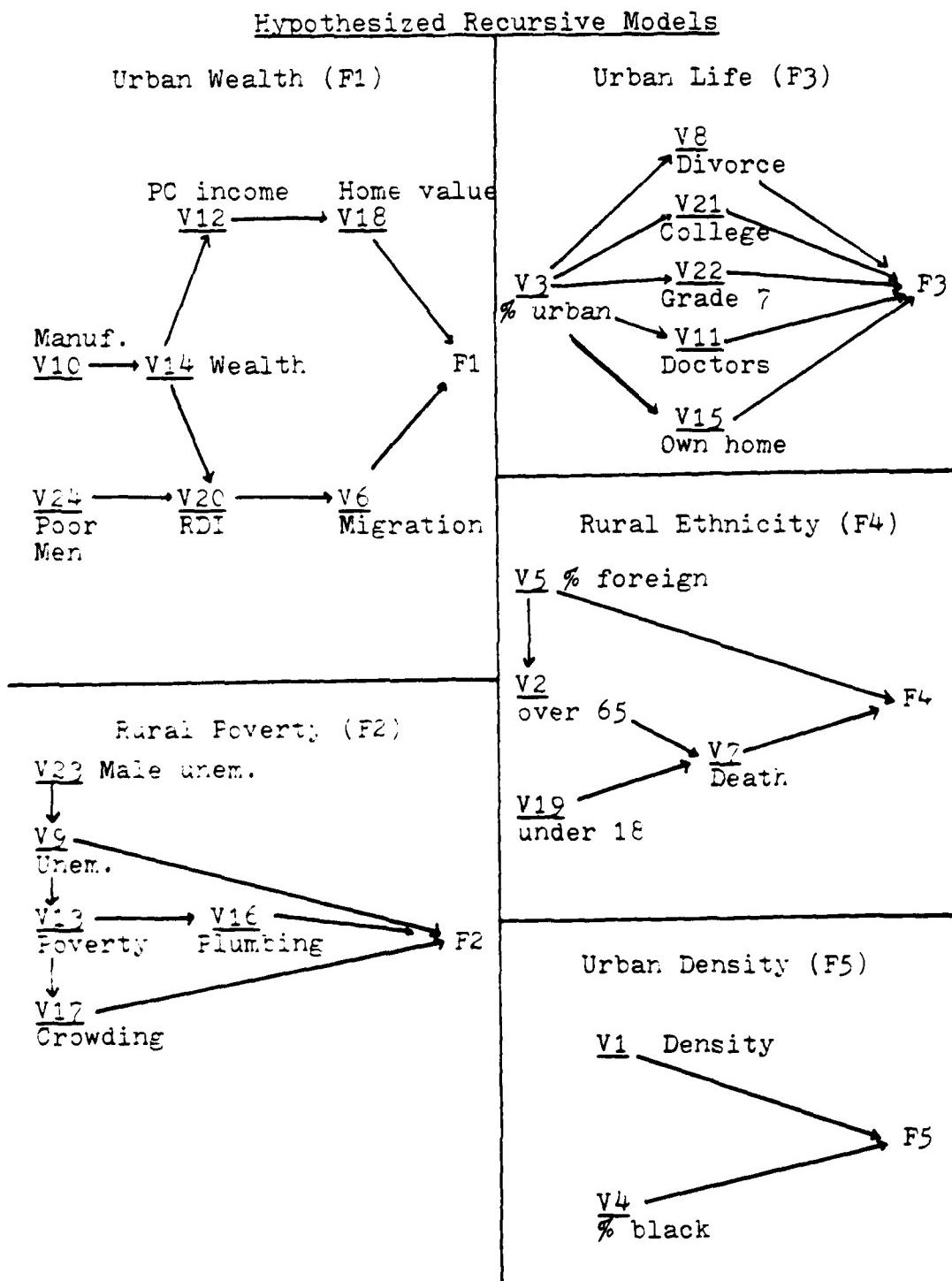
Causal modeling, despite its name, is not used in this paper to develop deterministic models of criminal behavior. Asher (1976, p. 5) notes that causal modeling is simply a technique for "selecting those variables that are potential determinants of the effects," but that the technique "cannot establish causal implications." The reason behind this failure is that it is not possible for the researcher to eliminate all causal factors which may be producing the observed relationship between X and Y. For this reason, a subjective interpretation of the one-way (recursive) path models is in keeping with the "nature and limitations inherent in ... any inexact, nondeterministic, and flexible model" (Asher: 1976, p. 5).

The hypothesized models for each of the five factors are shown in Figure 3 on page 78. What each of the five

models attempts to do, is structure the relationships among the significant variables as they relate to the factor dimension, which in turn, will be related to various crime arrest rates via stepwise multiple regression. The models are simplistic because only the highest loading variables are included although others play a role, and paths are one-way although feedback is important in reality. Furthermore, analysis of any behavioral component is absent, so the individual must be considered a "black box" in this study. In addition, it must be recognized that crime is being dealt with as a collective phenomenon capable of study only when it is overtly observable. The same is true of the variables for each factor so, the exact process by which the variables influence criminal behavior is unknown. Finally, it must be stressed that the hypothesized causal models depicted in Figure 3 only represent one of a number of ways in which these variables could be interpreted.

The model for Factor 1 is structured to depict the relationship of variables pertaining to wealth. Simply, it is hypothesized that manufacturing employment is the source of wealth leading to a high percentage of families with income over \$15,000 (V14). High income plus a low percentage of male income less than \$4,000 (V24) lead to a high loading of the RDI (V20) which in turn stimulates in-

Figure 3



migration (V6). Similarly, high income is seen as leading to high per capita income (V12) which is positively related to the median value of homes.

The structure for rural poverty first links the male unemployment rate (V23) to the overall unemployment rate (V9). The percent of unemployed workers is then seen as a key contributor to the overall dimension as well as a factor behind the % of families with income below 125% of the poverty level (V13). In turn, poverty income is linked to crowding (V17) and units lacking plumbing facilities (V16), both of which are characteristic of rural poverty.

No interrelationships were seen in factor 3 as revealed in the structural model. Here, each variable was seen as a characteristic of urbanization (V3), and therefore, characteristic of the urban life dimension.

From the loadings on Factor 4, it would appear that for Wisconsin, the remaining ethnic stock has aged and can be found primarily in rural counties. Thus, the % of foreign stock (V5) was linked to F4 and to the % 65 and over (V2). Both old age and the inverse loading on % under 18 (V19) were linked to the dimension's loading on death rate (V7).

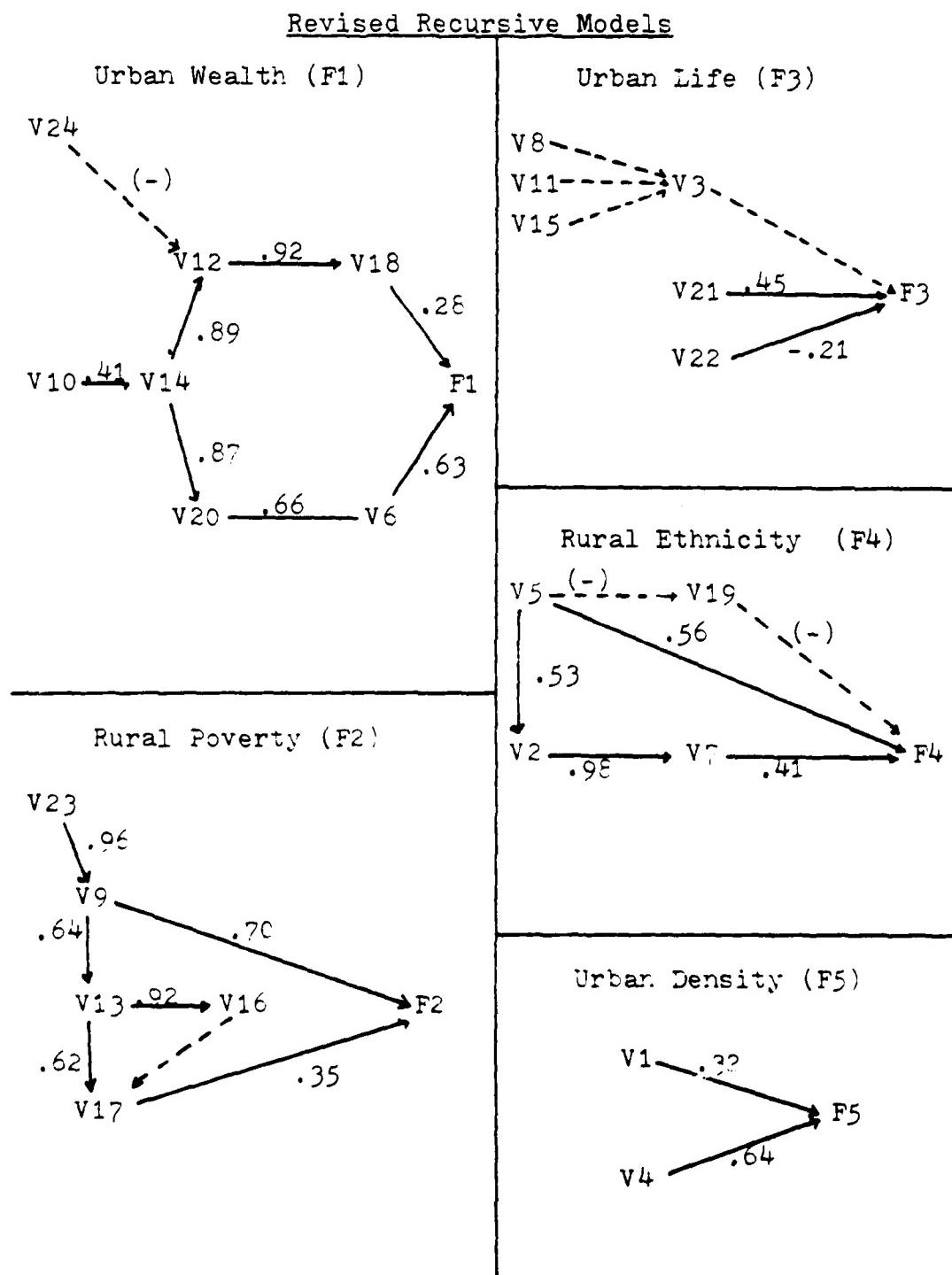
Factor 5, urban density was the simplest to model since only two variables loaded highest on this dimension. For this reason each was linked to the factor. Others,

however, might wish to include a link from population density (V1) to % black (V4) indicating that blacks have migrated to predominantly urban centers. This link has been excluded here in recognition of the more complex reasons behind moving to a city.

By writing the appropriate equations for each structural model it is possible to obtain the path coefficients for each link through linear regression techniques. The path coefficients gives the strength and direction (positive or negative) of the link and when squared, " p_{iq}^2 " represents the proportion of the variance in the dependent variable directly accounted for by the explanatory variable in question" (Asher: 1976, p. 44). Thus, one is able to say, via the path coefficients, that a change in one variable produces a specified change in another variable.

The revised causal models are shown in Figure 4. Basically, links were dropped if the path coefficient was less than .20. The magnitude of path coefficients are written above those links that were kept, and dotted paths represent the suggested links after one round of testing. Each included linkage represents a hypothesis that could not be rejected in the first round. Further testing could be accomplished if one merely wished to find the best fit, but only the testing of the initial hypothesized models is necessary to increase one's understanding of the

Figure 4



social phenomena involved in each factor.

The revised models indicate that the hypothesized models were generally valid with the exception of Factor 3. In Factor 1, only the % of low male income did not link to the RDI and was therefore suggested to link inversely with per capita income (V12). Similarly, all the links of Factor 2 held up, with the exception of that between V16 (lacking plumbing) and the rural poverty dimension (F2). Variable 16 was consequently hypothesized to link with crowding (V17) and thus, indirectly with F2.

In contrast to F1 and F2, the Urban Life dimension (F3) was on the whole, incorrectly structured. The resulting path coefficients revealed only the educational variables to link strongly with the overall dimension. Variables 8, 11, and 15 were subsequently tied to urbanization (V3) which then lead into the overall factor. The testing of Factor 3 was critical since it indicates that the factor may have been misinterpreted. Rather than simply describing urban life, Factor 3 appears to also be oriented towards higher education, and this may be useful in interpreting the regression results for the arrest rates.

The dimension of rural ethnicity, Factor 4, also held up well under testing. Only the % under 18 (V19) did not keep its link with the death rate and has been hypothe-

sized to be inversely linked with the % of foreign stock (V5) and to F4. The urban density model also did not require revision, if only because two variables were involved. The use of causal models does seem to have clarified the interpretation of the dimensions, and it is now possible to proceed to the test of the research hypothesis.

Testing the Research Hypothesis

Further testing of the causal models is possible since each ommitted link implicitly assumes that the path coefficient has a magnitude close to zero. The result is an overidentified model with more equations than unknowns. Thus, further testing is possible if the researcher has a sufficient theoretical basis for doing so. In the present thesis, the causal models were employed to increase our understanding of the variables being related to criminal arrest rates, not the theory behind urban and rural contrasts. Rather, it has been hypothesized here that the set of variables listed in Table 6 should associate most highly with street crime and less so with victimless and white-collar crimes. These variables were reduced to their underlying dimensions via principal components analysis and it is these dimensions that were in turn used as independent variables in a stepwise multiple regression with the arrest rates for each of the four crime categories.

The results of this analysis are shown below in Table 9.

Table 9.

Regression Results: Factor Scores
vs. Arrest Rates

Crime Category	Coefficient of Multiple Correlation	Coefficient of Multiple Determin.
Violent Crime	R = .8455	R^2 = .7148
Property Crime	.7163	.5131
Victimless Crime	.5916	.3500
White-Collar Crime	.5077	.2577

On the basis of these results, it is therefore not possible to reject the research hypotheses at this time. The values of R and R^2 clearly demonstrate that the factors explained more of street crime than of higher-status crimes. Or if one believes that arrest rates are completely unrepresentative of the true occurrence of crime, then it could at least be said that police concentrate their efforts far more frequently on lower status crimes.

The stepwise multiple regression (backward at the .1 significance level) was employed to eliminate those factors which did not contribute substantially to the statistical explanation of the arrest rates. Further analysis can therefore be accomplished by examining the factors which associated most highly with each crime category.

For violent crime, Factors 2, 4, and 5 were significant, and Factors 1 and 3 were discarded (Urban wealth and urban life). Hence for Wisconsin, indices of rural characteristics and urban density were most significant in predicting violent crime arrests. Again, the standardized regression coefficients give the strength of each factor (these results are displayed with the other crime categories in Figure 5). Rural poverty was the most significant (.7319) and may indicate a rural subculture of violence similar to that which has been proposed for urban ghettos. Rural ethnicity, however, loaded inversely (-.2714) which may be interpreted as being due to the higher age of this dimension or to the possibility that Wisconsin's foreign stock have managed to disseminate nonviolent mores in their areas. Finally, urban density was associated positively to violent crime (.3252). Due to the level of aggregation, it cannot be determined whether this association is due to greater violence among blacks as past research and statistics indicate, or if this is merely a function of life in urban areas. The causal model for Factor 5 nevertheless indicates that % Black was more strongly linked to the dimension than was population density.

Only urban factors loaded highly on property crime. Urban wealth (.4149) is logically linked since a greater

accumulation of property provides a target for crime. Likewise, urban life (.5039) is practically synonomous with street crime of a material nature. Urban density was also positively related to property crime (.2988) as one would expect. Altogether, these loadings confirm and reinforce past findings that larceny and auto theft are predominantly an urban occurrence.

For victimless crime, all urban factors were significant as was the rural poverty factor. Urban wealth loaded most highly on this crime category (.4770) but rural poverty was significant also (.2106). Since arrests for commercial vice and gambling came almost exclusively from Wisconsin's urban centers, the rural dimension indicates that arrests for controlled substances was a priority in rural counties, second only to arrests for violent crime.

Finally, arrests for white-collar crimes associated only with the urban dimensions. Of these, urban wealth was most significant (.3686). However, while white-collar crime is mainly an urban phenomena, as is street crime, it is important to remember that urban factors together explained much less of the statistical variation than in the street crime categories.

The results of this analysis are displayed together in Figure 5 on the next page. Rather than the paths running directly from the factors to the crime in question,

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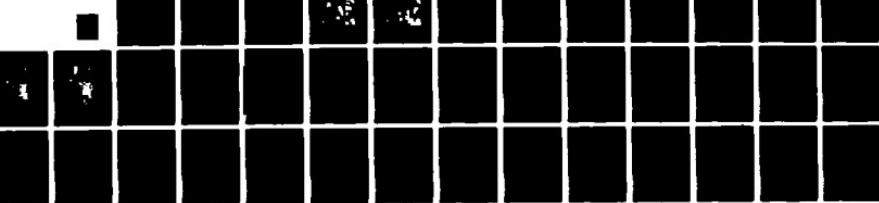
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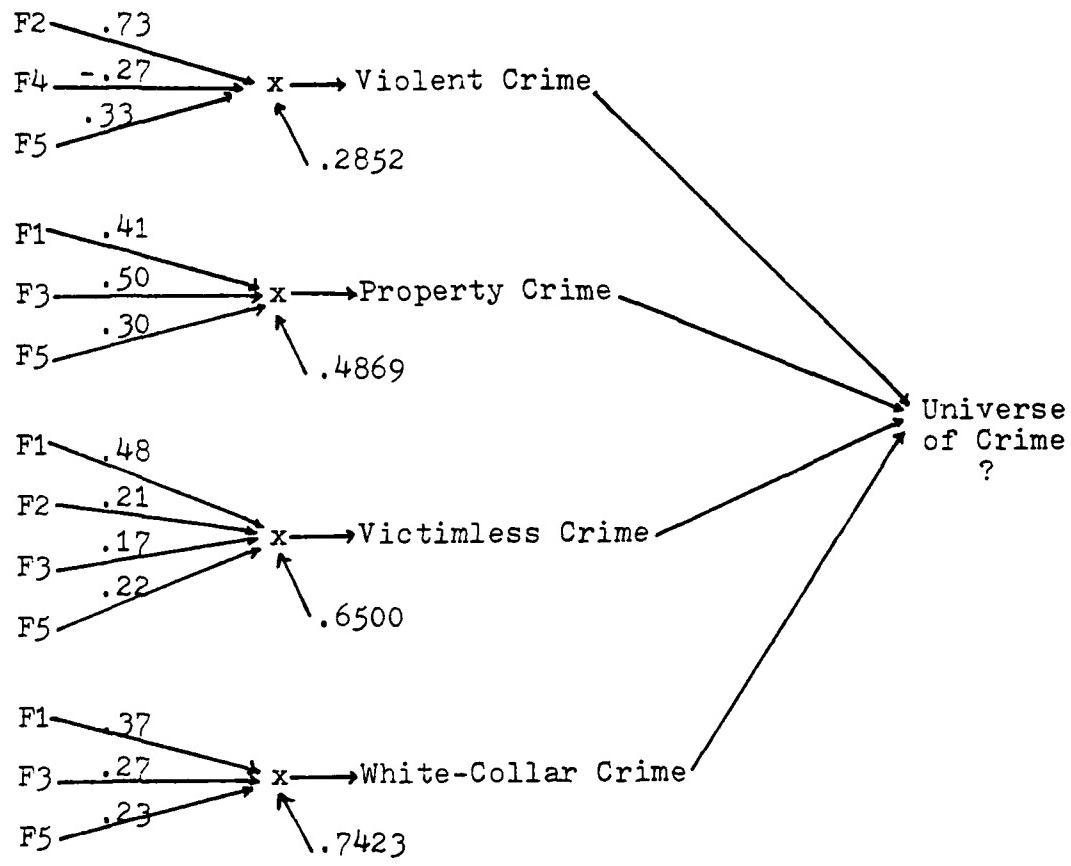
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Figure 5
The Universe of Crime



an 'x' was inserted to represent the unknown process by which these variables influence human behavior. The normal response to most so-called criminogenic environments is law abiding behavior, and the associations found here are probabilistic at best. For this reason, the statistical laws on the level of mass phenomena are also referred to as tendency laws (Vermes: 1978, p. 113). The number above each link in the diagram is the standardized regres-

sion coefficient or path coefficient which gives the strength and direction of each link. The number below each 'x' represents the amount of variation unexplained by the significant dimensions and is obtained by subtracting the coefficient of multiple determination (R^2) from one (1) in Table 9. Thus, the diagram suggests that as the status of the crime increases, confounding factors play a greater role in criminal behavior. No links are drawn between the Factors, since by definition they are independent. The diagram could be extended, however, by inserting the revised causal models from Figure 4 (p. 81) into their proper dimensions. One last observation is that Factor 4, rural ethnicity, was not significant in any crime except violent crime where it loaded inversely. So if urbanization and poverty are associated with crime, at least for Wisconsin, there is a rural ethnic dimension where crime is apparently not overwhelming and where perhaps local norms discourage it.

Crimes Known to Police

Although the preceding analysis upholds the research hypothesis that standard criminogenic variables play a smaller role in higher status crimes, the fact remains that arrest rates were used to index the commission of crimes. Better data, however, was not available. Even on a national scale, Part I and Part II crimes cannot be

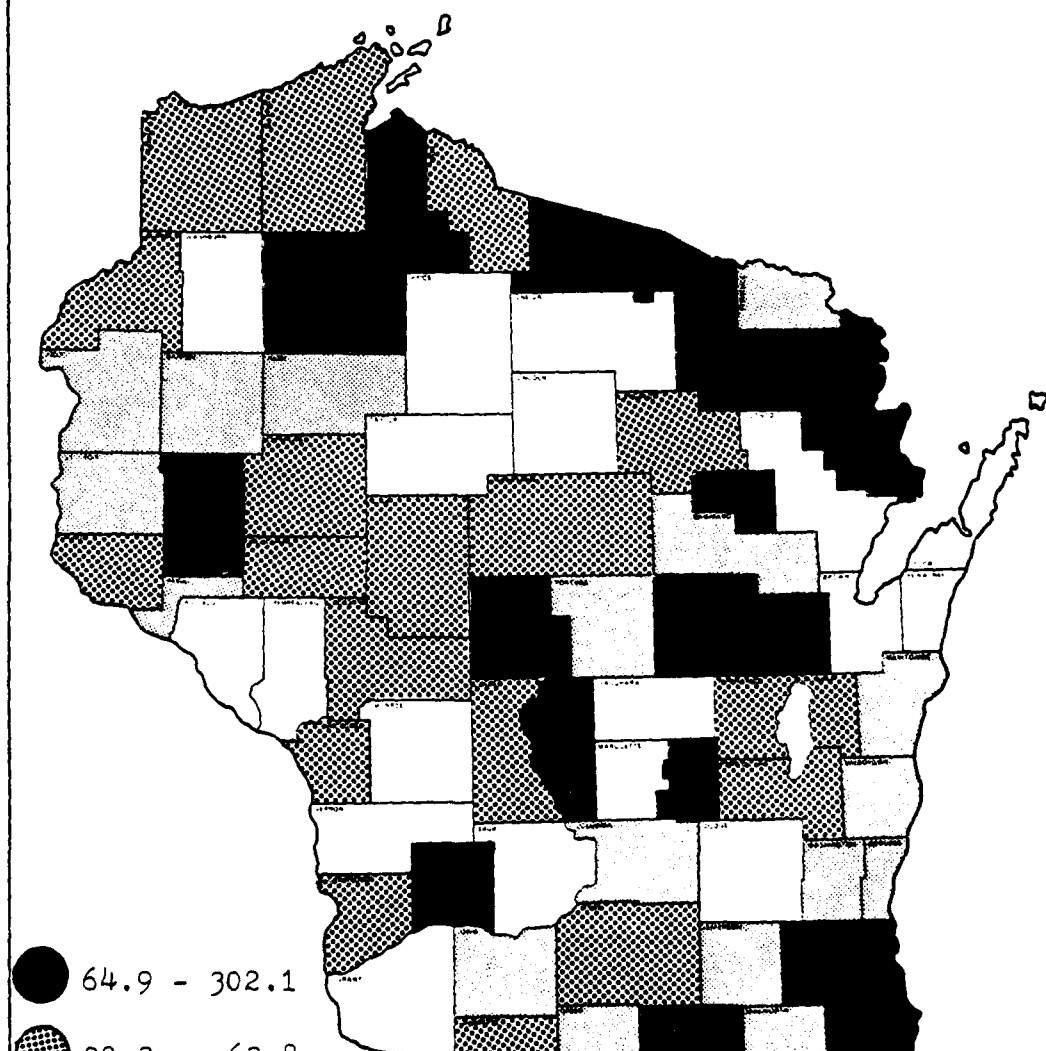
compared since the FBI reports Part I crimes as "crimes known to police," while Part II crimes are given as arrest rates for all the crimes listed in the sourcebook, Wisconsin Criminal Justice Information (annual). Crimes known to police was nevertheless kept for UCR reporting purposes, and this category may be used to calibrate the findings when arrest rates were employed.

Because "crimes known to police" is a closer approximation of the actual occurrence of crime, one might expect the level of statistical explanation to be less than that found for arrest rates. Since the criminal justice system is not the most partial, administrative procedures tend to filter out those with higher status first giving the situation above. This proposition might be tested if one regressed a set of variables against crimes known to police, arrest rates, court data, and then prison statistics. The purpose here, however, is merely to provide a partial qualification of the previous results.

Once again, the first step of analysis was to map the spatial distribution of street crime by the choropleth method. The resulting maps are shown on the following two pages, and when compared to the maps for arrest rates of violent and property crime on pages 63 and 64, clear differences emerge. For instance, Richland and Green Lake counties were among the lowest quartile for violent crime

Map 5.

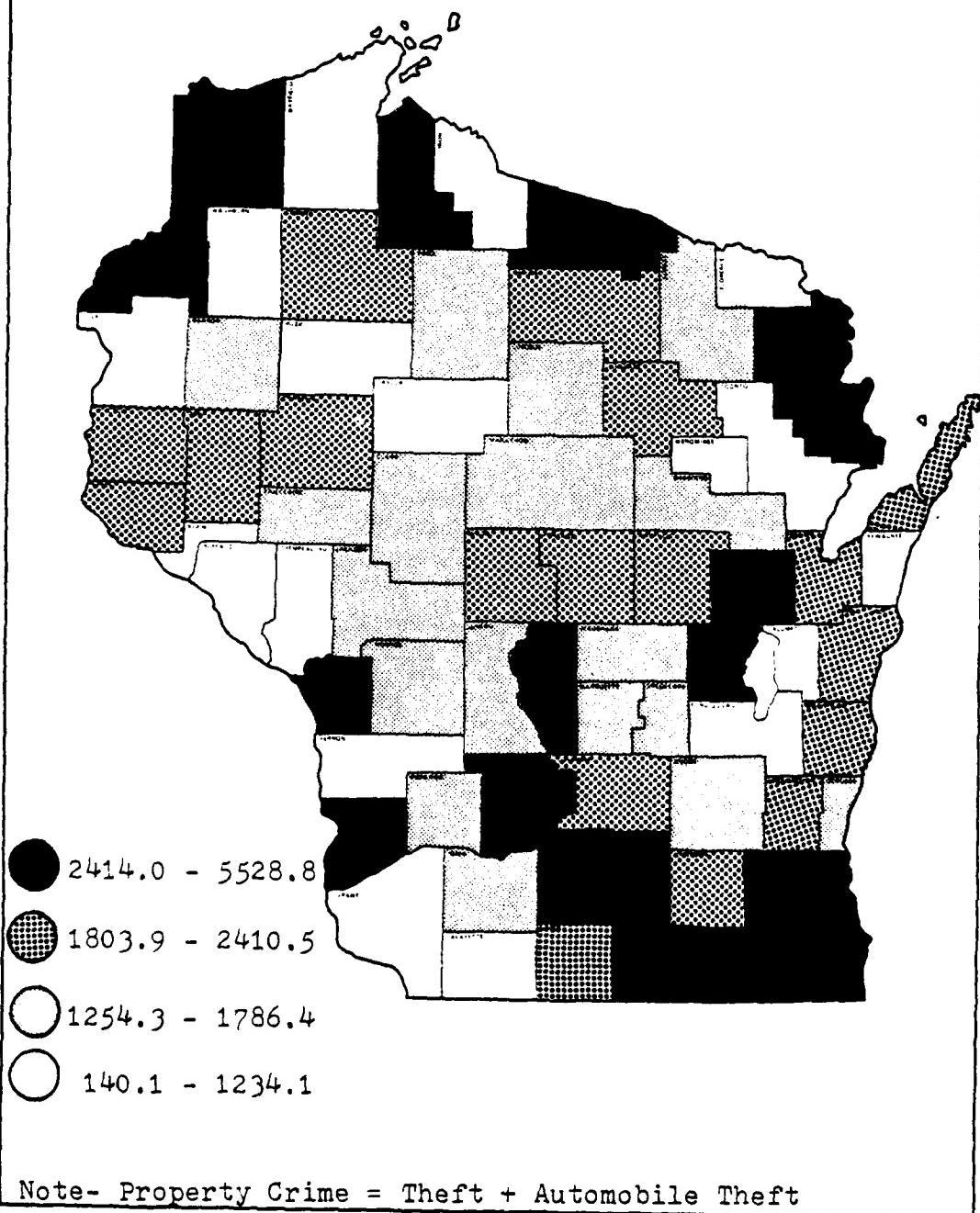
Wisconsin, 1975: VIOLENT CRIMES KNOWN TO POLICE
Rate per 100,000 Inhabitants



Note- Violent Crime = Homocide + Aggravated Assault

Map 6.

Wisconsin, 1975: PROPERTY CRIMES KNOWN TO POLICE
Rate per 100,000 Inhabitants



arrest rates but were in the highest for violent crimes known to police. Similar changes in quartiles are also apparent in the maps for property crime, leading one to expect at least slightly different results in a regression analysis.

Using the same five factors as independent variables in a stepwise regression analysis with crimes known to police as dependent variables, truly different results emerged. Factors 1, 2, and 5 were significant for violent crime but explained only .3869 (R^2) of the statistical variation compared to .7148 when arrest rates were used. The loading of the factors was not strikingly different however. Urban wealth (F1) which did not play a role in arrest rates for violent crime was only weakly linked here ($p = .18$). Rural poverty was important as before ($p = .51$) and Urban density maintained its strength as a factor ($p = .30$). Rural ethnicity which loaded inversely in the previous analysis was not significant here. Crimes known to police, therefore, seems to follow a more complex pattern than that of arrest rates.

In contrast to violent crime, the level of explanation increased when property crimes known to police was substituted for arrest rates as the dependent variable ($R^2 = .5801$, up from .5131). Each of the urban dimensions were important here as before (F1, $p = .42$; F3, $p = .47$;

and F5, $p = .39$) but rural ethnicity was also linked if not quite as strong (.17). Because "crimes known to police" had mixed results with street crime, it is difficult to say what would have happened had data existed for other crimes as well. It does indicate, however, that the present study is by no means conclusive.

Conclusion

The purpose of this chapter was to test the research hypothesis that a set of variables which are generally found to associate highly with street crimes would be less important when considering higher status crimes. To accomplish this end, twenty-four variables were selected on the basis of past research and reduced to five independent dimensions by principal components analysis. These factors served as the independent variables in a stepwise multiple regression with arrest rates for four crime categories as the dependent variables. The results of this analysis demonstrated that the factors were indeed more important in explaining the statistical variation in violent and property crime, but much less so for victimless and white-collar crime. As expected urban and poverty dimensions were responsible for most of the variation explained. To check the results, the statistics for violent and property crimes known to police were substituted for dependent variables. Not surprisingly, differ-

ent results emerged. The new regression analysis revealed that the variable dimensions explained much less of the variation for violent crime but more variation in property crime. Hence, the results of this study are by no means conclusive, but are at least indicative of a new direction in criminology. Further testing of the research hypotheses is called for, but in the mean time, researchers should take care in interpreting their results. Particularly, in studies of street crime, it should be noted that findings are not applicable to any other type of crime, and that street crime is certainly not an index of crime in general.

Chapter Five

MILWAUKEE: AN INTRAURBAN ANALYSIS

With well over a half a million people, Milwaukee is easily Wisconsin's largest city. In this chapter, violent and property crimes known to police are analyzed by census tract to provide a further calibration of the findings in Chapter 4. Ecological research, crime or other, has been conducted far more extensively at the scale of the city, and the most important dimensions have been socioeconomic status, family status, and ethnic status (Rees: 1971, p. 229-230). Thus, at a much larger scale, the results of Chapter 4 for violent and property crime may not hold true. However, even at the census tract level, associations that are found do not necessarily apply to individuals and the researcher must be even more wary of the ecological fallacy.

Although generalizations at the county level are not likely to be inferred as true of individuals, at the city-scale many researchers cannot resist the temptation to make conclusions about individual tendencies based on tract level findings. However, one can never base conclusions about individual behavior on data that has been aggregated to a higher level. The pitfalls of the eco-

logical fallacy are apparent when data aggregated to the tract or county level disguises the actual nature of the given location. For instance, a census tract populated mostly by older middle-class people might have one section that is run-down with many broken homes and jobless youth. If this quarter of the tract is characterized by a high crime rate, then at the tract level it could appear that crime is related to older, middle-class citizens. Thus, all associations found at the intraurban or intrastate level cannot be assumed to apply at the individual level.

The data for this analysis was obtained from Crime Statistics by Census Tract for Milwaukee for the year 1973. When this data is compared to that of other cities over 250,000, it is readily apparent that Milwaukee is a low crime urban center, just as Wisconsin is a low crime state. In fact, the figures in Table 10 show that the rate of crimes known to police for Milwaukee are in some instances even lower than that for the Milwaukee SMSA and the national rate. Nevertheless, because of the complexity of a city this size and the use of crimes known to police, a lower level of statistical explanation is expected in the following analysis. And again, findings of this chapter are not necessarily representative of large U.S. cities.

Homocide and assault were selected for the violent

Table 10.

Index Crime Offense Rates for 1973

<u>Crime</u>	<u>National Rate*</u>	<u>U.S. cities over 250,000</u>	<u>Milwaukee SMSA</u>	<u>City of Milwaukee</u>
Homocide	9.3	20.7	5.0	9.2
Rape	24.3	51.4	16.6	24.6
Assault	198.4	359.9	64.1	95.7
Robbery	182.4	571.5	88.7	142.1
<u>Violent Crimes</u>	<u>414.3</u>	<u>1003.4</u>	<u>174.3</u>	<u>249.4</u>
Burglary	1210.8	1949.3	676.1	733.1
Larceny	2051.2	2651.8	2500.8	1759.6
Auto Theft	440.1	978.4	436.7	714.4
<u>Property Crimes</u>	<u>3702.1</u>	<u>5579.5</u>	<u>3613.5</u>	<u>3207.1</u>

* Rate per 100,000 population.

Source: Crime in the United States, 1973, FBI, Uniform Crime reports, U.S. Dept. of Justice. City of Milwaukee calculated from Crime Statistics by Census Tract for Milwaukee, 1973.

crimes category, and larceny and automobile theft made up the class of property crime. Stepwise multiple regression was chosen to test for the strength of association between these categories and the independent factors from the principal components analysis. However, four problems, similar to those of the county-level analysis, are inherent in the use of this data and particular methodology which must be considered.

1. The findings may be unique to Milwaukee in 1973.
2. Crime data is from 1973, and census data

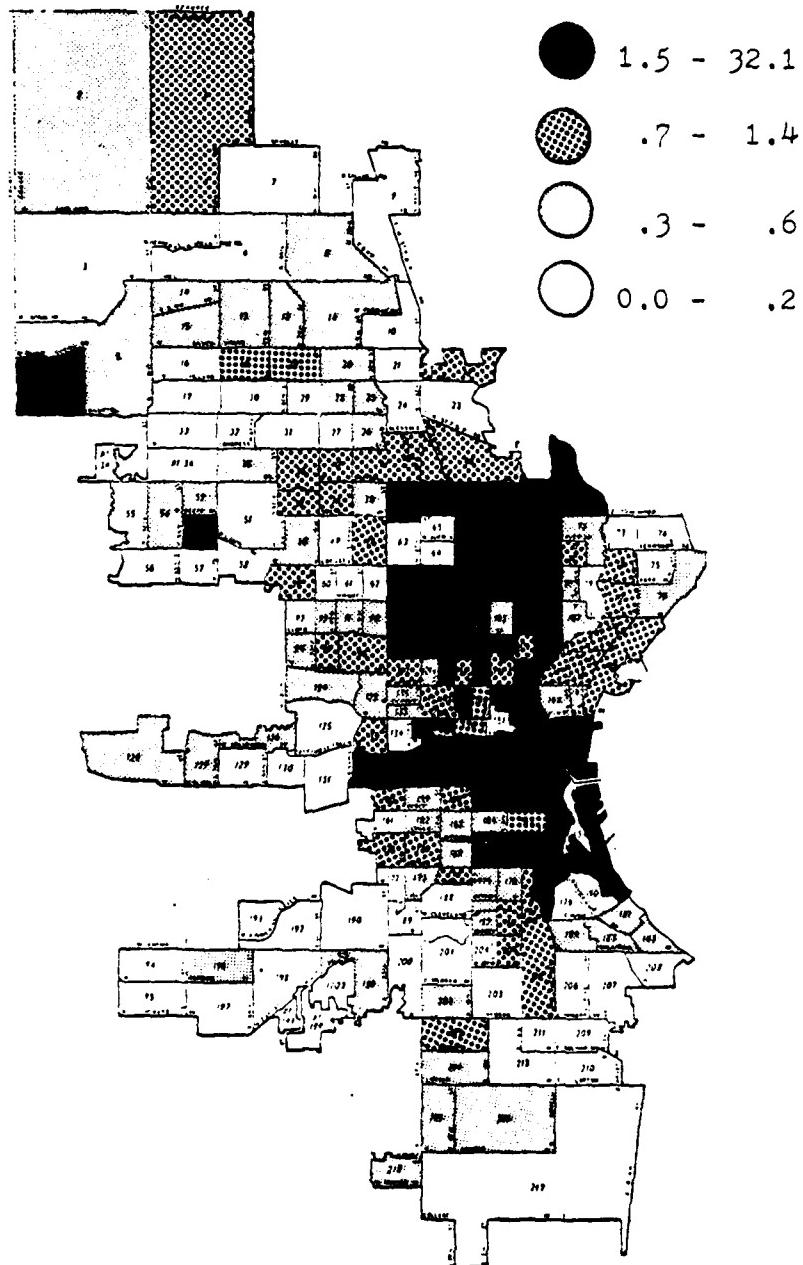
from 1970. If the character of a few communities changed, then the results will be affected.

3. The analysis is subject to the "ecological fallacy" since data are aggregated to the tract level which may disguise individual variations.
4. Multiple regression assumes that there is constant variance among error terms and that these error terms are not correlated with other variables, neither of which may exist.

In line with the ecological approach, the actual data for the violent and property crime categories were ranked and divided into quartiles for mapping purposes. The resulting maps (no.s 7 and 8) which follow reveal the highest incidence of crime directly around the central business district and then falling off again towards the city edge, although with some significant exceptions. If the inner city is marked by poverty, then one could plausibly expect low socioeconomic status to associate highly with crime.

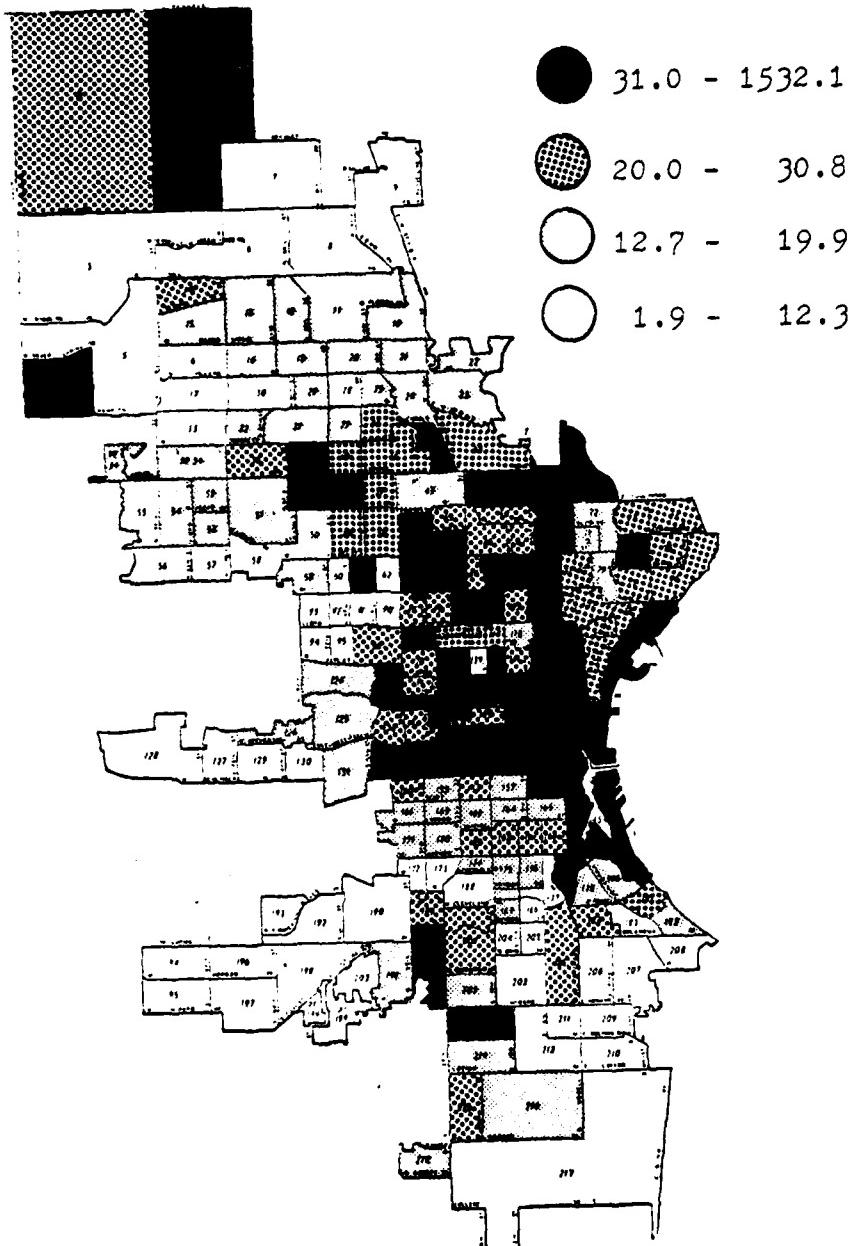
Selecting variables for the principal components analysis was mainly on the basis of availability and similarity with those variables used in the county analysis. All variables were extracted from the 1970 Census of Population and Housing and are listed in Table 11. Fortunately, statistics were available for 214 of Milwaukee's 218 tracts, and the study is not biased by sampling error except for that which exists in the data.

Map 7.
MILWAUKEE, 1973: VIOLENT CRIME RATE per 1,000



Note- Violent Crime = Homocide + Aggravated Assault

Map 8.
MILWAUKEE, 1973: PROPERTY CRIME RATE per 1,000



Note- Property Crime = Theft + Automobile Theft

Table 11.
Variables for Intraurban Analysis

1. % Black.
2. % under 18 years old.
3. % of families with female head and children under 18 years.
4. Persons per household (PPH).
5. % foreign born.
6. % high school graduates.
7. Persistence, % with same residence in 1965 and 1970.
8. The "Southern Violence Syndrome"; % with residence in the South in 1965.
9. % of civilian labor force unemployed.
10. % of males, 16 to 21 years old, unemployed or not in labor force, not enrolled in school, and not high school graduates.
11. % professional, technical, and kindred workers of total employed, 16 years old and over.
12. % of total employed in manufacturing, 16 years and over.
13. Median income.
14. Relative Deprivation Index, ratio of the % of families with incomes .50 to .74 of poverty level to those with 3.00 or more of poverty level.
15. % of all unrelated individuals with incomes below poverty level.
16. % of owner-occupied year-round housing units.
17. % of year-round housing units lacking some or all plumbing facilities.
18. Median number of rooms.
19. % of occupied units with 1.01 or more persons per room.
20. % of specified renter occupied units with contract rent \$60 to \$79.
21. % of all year-round housing units built in 1939 or earlier.
22. % of renters with less than \$5,000 income but paying 35% or more of income for rent.

Source: U.S. Bureau of the Census, Census of Population and Housing, CENSUS TRACTS, Final Report, PHC (1) - 131, Milwaukee, Wis., SMSA.

The variable data were next decomposed by the principal components analysis. The results of this analysis are shown in Table 12, the correlation matrix, and Table 13,

CORRELATION MATRIX

VARIABLE NO.	1	2	3	4	5	6	7	8
1	1.000							
2	.562	1.000						
3	.803	.421	1.000					
4	.323	.830	.039	1.000				
5	-.540	-.501	-.340	-.426	1.000			
6	-.535	-.329	-.634	-.092	.087	1.000		
7	-.382	-.010	-.457	.183	.166	.136	1.000	
8	.684	.328	.538	.203	-.388	-.351	-.396	1.000
9	.559	.280	.570	-.003	-.221	-.455	-.466	.47
10	.492	.302	.493	.180	.173	-.445	-.255	.26
11	-.311	-.512	-.335	-.272	.128	.692	-.142	-.16
12	.189	.483	.138	.373	.140	-.587	.155	.15
13	-.658	-.375	-.850	.049	.259	.774	.355	-.42
14	.393	.330	.568	.081	-.227	-.246	-.095	.07
15	.417	.277	.552	.038	-.130	-.523	-.218	.24
16	-.388	.086	-.672	.387	.034	.446	.681	-.36
17	-.044	-.320	.221	-.503	.173	-.321	-.294	.04
18	.052	.440	-.225	.718	-.071	.082	.364	-.01
19	.660	.836	.582	.651	-.531	.518	-.190	.47
20	.618	.356	.668	.100	-.221	-.825	-.274	.46
21	.276	.005	.356	-.170	.096	-.592	-.211	.26
22	.609	.110	.713	-.212	-.154	-.569	-.486	.50

VARIABLE NO.	13	14	15	16	17	18	19	20
13	1.000							
14	-.463	1.000						
15	-.562	.300	1.000					
16	.639	-.295	-.391	1.000				
17	-.340	.115	.168	-.577	1.000			
18	.301	-.100	-.088	.543	-.644	1.000		
19	-.545	.356	.360	-.209	-.013	.092	1.000	
20	-.729	.109	.441	-.512	.329	-.060	.517	1.00
21	-.473	-.035	.336	-.457	.353	.069	.024	.7
22	-.709	.251	.522	-.667	.351	-.351	.359	.5

Table 12.
Correlation Matrix

4 5 6 7 8 9 10 11 12

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1,000	1,000						
.426	.087	1,000					
.092	.166	.136	1,000				
.183	.388	.351	.396	1,000			
.203	.221	.455	.466	.476	1,000		
.003	.173	.445	.255	.267	.434	1,000	
.180	.128	.692	.142	.161	.252	.205	1,000
.272	.140	.587	.155	.156	.098	.127	.777
.373	.259	.774	.355	.420	.556	.437	.555
.049	.227	.246	.095	.072	.049	.259	.127
.081	.130	.523	.218	.244	.383	.273	.261
.038	.034	.446	.681	.365	.483	.338	.004
.387	.173	.321	.294	.044	.181	.004	.128
.503	.071	.082	.364	.010	.207	.030	.007
.718	.531	.918	.190	.477	.440	.379	.525
.651	.221	.825	.274	.494	.511	.432	.439
.100	.096	.592	.211	.242	.308	.212	.286
.170	.154	.569	.486	.501	.586	.351	.231
.212							.069

16 17 18 19 20 21 22

1

1.000									
- .577	1.000								
.543	- .644	1.000							
- .200	- .013	.092	1.000						
- .512	.329	- .060	.517	1.000					
- .057	.353	.069	.024	.704	1.000				
- .667	.351	- .351	.359	.543	.376	1.000			

Table 13.

Rotated Factor Matrix

<u>Var./Factor</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>Communality</u>
1. % Black	.725	.222	.222	.459	-.071	.839
2. Under 18	.270	.496	.587	.334	-.333	.887
3. Broke home	.607	.222	-.118	.681	.024	.896
4. PPH	.092	.324	.822	.063	-.312	.890
5. % foreign	-.463	-.152	-.259	-.128	.545	.618
6. HS grad.	-.317	-.696	.107	-.409	-.354	.889
7. Persist.	-.738	.204	.308	-.052	.001	.684
8. From South	.797	.154	.109	.023	-.051	.673
9. Unemployed	.727	.179	-.099	.149	.096	.602
10. Crime pool	.400	.084	.188	.450	.208	.448
11. Prof. work	-.014	-.920	.004	-.169	.006	.875
12. Manufact.	.012	.901	.154	-.090	.057	.847
13. Median Inc	-.471	-.472	.256	-.597	-.111	.880
14. RDI	-.045	-.028	-.044	.893	-.232	.867
15. Poverty	.272	.213	-.042	.561	.232	.490
16. Own Home	-.581	.032	.548	-.380	-.220	.833
17. Plumbing	.108	.186	-.793	.095	.142	.705
18. # of rooms	-.141	.022	.922	-.061	.204	.916
19. Crowding	.464	.542	.265	.368	-.391	.868
20. Cheap rent	.539	.601	-.058	.251	.372	.856
21. Old homes	.308	.320	-.089	.106	.767	.805
22. High% rent	.631	.145	-.325	.400	.169	.713

Eigenvalue 8.327 4.050 2.226 1.375 1.105

% of total
variance 21.9% 17.3% 15.3% 14.7% 8.4% = 77.6%

the factor structure. In the correlation matrix, the amount and degree of intercorrelation are sufficiently high to insure a fairly successful factor analysis. The rotated factor matrix shows this to be the case as the five dimensions which emerged (with eigenvalues over 1.0) explained 77.6% of the total variance within the twenty-two variables. In contrast to the urban-rural dimensions which emerged in the county-level analysis, the five fac-

tors in Table 13 seem to measure various levels of social position or class.

Factor 1 was interpreted as a dimension of chronic poverty. Indeed, all loadings on this factor point towards an inner-city ghetto. Variables loading highest on this factor include: % Black (.725), persistence (-.738), former residence in the South (.797), % unemployed (.727), % of owner-occupied units (-.581), and low-income/high rent (.631). These loadings point to an area of extreme poverty and high turn-over. The correlation matrix indicates that % Black is also associated with former residence in the South ($r = .684$) and unemployment ($r = .559$). Also loading fairly high on this factor was the % of female head families with children (.607) and low-price renters (V20, .539). It is perhaps safe to expect that this dimension will associate highly with at least one of the street crime categories, as it has in past research.

Factor 2, the working class dimension, is one of low socioeconomic status, but conditions not quite as bad as those of chronic poverty. Significant loadings here were: % high school graduates (-.696), professional workers (-.92), manufacturing workers (.901), crowding (.542), and low-price renting (.601). Although median income loaded inversely, there was a much smaller loading on unemployment, most likely due to the availability of manufacturing

work.

Middle class status best describes Factor 3 with high loadings on the % under 18 (.587), persons per household (.822), lacking some plumbing facilities (-.793), and median number of rooms (.601). More significant, perhaps, was that only on Factor 3 did median income load positively (.256), and that home ownership also had a fair positive loading (.548). But because of the greater number of youths in this dimension, it would not be prudent to speculate a low association with crime.

Interpreting Factor 4 was difficult because of many similarities with Factor 1. Families with female heads and children under 18 loaded high (.681) along with unemployed, unenrolled youth (.450), median income (-.597), RDI (.893), and incomes below poverty level (.561). The high loading of the relative deprivation index points toward a dimension of uniform poverty, and this is confirmed by the other significant loadings. Perhaps what distinguishes Factor 4 most from Factor 1 is its greater stability. Persistence, although inversely loaded (-.052), is relatively stronger here when compared to the loading on Factor 1 (-.738). Factor 4, then, appears to characterize the struggling poor trying to escape the conditions of extreme poverty found in Factor 1.

Factor 5 has described the ethnic poor. The two

variables which load highest here are % foreign born (.545) and pre-1939 housing (.767). Examining the other variables reveals inverse loadings for those under 18 and median income. Apparently the ethnic stock of Milwaukee is aging as is that of Wisconsin's rural counties. If the same norms exist among this urban group then there will be a negative relationship with crime or none at all.

Regression Results

The results of the stepwise multiple regression (backwards at the .10 significance level) point to the more complex patterns of crime at the intraurban level. The findings are summarized in Table 14 below.

Table 14.

Regression Results: Factor Scores vs.

Crimes Known to Police

<u>Crime Category</u>	<u>R</u>	<u>R</u> ²	<u>Significant Factors</u>
Violent Crime	.7036	.4950	F1 p = .5660 F2 p = .3080 F3 p = -.1339 F4 p = .2402
Property Crime	.5607	.3144	F1 p = .2206 F3 p = -.4953 F4 p = .1382

Whether or not the coefficient of multiple determination, R^2 , would be even lower for higher status crimes is open to debate. The analysis does indicate, however, that behavioral variables would be even more important at the urban scale, although one might be tempted to guess that

the level of explanation would be much higher had arrest rates been available for use by census tract. If this were the case, then there would be a strong basis for the conclusion that police operations are even more influenced by "criminogenic variables" than are criminals themselves. Nevertheless, the results at the intraurban level do not contradict those of Chapter 4.

For violent crime, it is not surprising that chronic poverty (F1) was the most significant giving some credence to Wolfgang's subculture of violence (1967). It may very well be that in areas of abject poverty, with few avenues of escape, violence becomes a conditioned response among some segments of the population. Whether the entire population of a poor ghetto reacts to situations more violently, however, is still a questionable proposition. More interesting is the greater link between crime and the working class over that of the struggling poor (F4). Although neither groups live in comfortable surroundings, most would probably expect more violence in the areas characterized by Factor 4. Finally, the middle class dimension (F3) was inversely associated to violence suggesting that middle class norms are effective among this group in lowering rates of violent crime.

The dimension of middle class status was even more important to the explanation of Milwaukee's property crime

rate with a high inverse loading (-.50). Working class status did not play a role here, but chronic poverty and the struggling poor dimension were again associated. Factor 5, the ethnic poor was insignificant in this analysis, for both violent and property crime rates, indicating a subculture with low rates of crime, perhaps a carry-over from a strong work ethic.

Conclusion

A partial check of the results in chapter four was provided by an intraurban analysis of Milwaukee's actual rates of violent and property crimes. Similar variables to those of the county-level analysis were selected and reduced to five underlying dimensions via principal components analysis. Whereas the factors on the intrastate scale were rural and urban in nature, those of Milwaukee revealed distinct differences of socioeconomic status. When these factors were employed as independent variables in a stepwise multiple regression with crime rates as the dependent variables, only a moderate association was produced, indicating greater complexity of crime patterns in an urban context. Within Milwaukee, however, it appears that poverty and the conditions which produce it, or result from it, are a major factor for both violent and property crime. Likewise, conditions of middle class life, where avenues exist to reach societal goals, seem

to inhibit criminality. But these results are by no means conclusive and, as with all criminal investigations, beg for further inquiry.

Chapter Six

CONCLUSION:

A STATEMENT ABOUT STATISTICAL RESEARCH IN CRIME

In the history of criminological research, much emphasis has been placed upon the study of street crime, both because of the availability of data and the fact that this type of crime has historically concerned the public more than others. Although interest has increased in studies of victimless and white-collar crimes, public fear over rising levels of index crime continue to prompt researchers to maintain this narrow view. Thus, most theory of criminal behavior has evolved from the study of low-class crime. Much of the existing theory, however, is weakly developed and ineffective in explaining high status crimes. That this may be a result of the field's narrow focus on street crime seems to have eluded many researchers. The purpose of this thesis, therefore, has been to demonstrate this problem by showing that variables which associate highly with street crime are less effective in explaining variation in higher status crimes.

The seven crimes which have been the object of intense study for many years are homicide, aggravated assault, robbery, rape, burglary, larceny and automobile

theft. According to many statisticians and the FBI, rising levels for these crimes roughly indicate increases in the commission of other crime, types, hence the name "index crimes." Index crimes, however, only index those seven specific crimes, and in reality, bear little relation to higher status crimes. The very nature of other crimes, such as white-collar, is radically different from that of index crimes; and it is unlikely that the forces which precipitate a rise in street crime also produce equivalent increases in the occurrence of other crimes. Thus, one could imagine a set of variables which associate highly with street crime, but which were much less successful with higher status crimes because the various crimes shared only a few common variables. But exactly what variables beyond this shared set are necessary to raise the level of explanation for high status crimes are not yet known. Providing evidence for this assumption was the goal of the present study since this would reveal a need for new directions in criminology.

Explanations for street crime have varied through time, but most seem to point out the influence of man's surrounding environment as a major factor in determining criminal behavior. A great deal of evidence in this regard has been provided by studies of an ecological nature which reveal associations between socioeconomic,

demographic, and land-use variables and rates of crime for various spatial units. A large faction of criminologists have since embarked on a journey of causal theory building which places much of the blame for man's criminal behavior on conditions outside of his control. Others, however, have pointed out that many people are subjected to the same adverse pressures but still respond with law-abiding behavior. This second view was adopted here with the recognition that man's environment may indeed play an important role in shaping patterns of criminality. But whether the variables which normally associate highly with street crime would be equally important to other crimes was questioned here.

General Results

To test the hypothesis that conditions conducive to street crime are not as relevant to other crimes, a set of variables was chosen on the basis of past associations to violent and property crime. These variables were then reduced to their underlying dimensions by the technique known as principal components analysis and employed as independent variables in a series of stepwise multiple regressions with arrest rates for four categories of crime as the dependent variables. Wisconsin was the area of study as this state provides more comprehensive criminal statistics which include arrest rates for both Part I

(index) and Part II (other) crimes. Nineteen seventy-five was the year of study allowing for the selection of variables of a similar time period. Three limitations were inherent to the study and were carefully considered before interpreting the results. First, the crimes selected for victimless and white-collar categories (non-index crimes) may not have been truly representative of that classification. Second, the statistical data did not meet all of the assumptions of factor analysis and multiple regression. And third, the level of aggregation in the study makes it susceptible to the ecological fallacy. Thus, associations found at the intrastate or intraurban scale do not necessarily apply at the individual level. With this in mind, research proceeded.

The factor analysis of the data at the county level resulted in five dimensions, each of either an urban or rural nature. When the factor scores of each dimension were regressed against arrest rates for all of the counties ($N = 72$), the results were in keeping with the research hypothesis. In short, the factors explained most of the variation in arrest rates for violent crime ($R^2 = .71$) but correspondingly less as the status of the crime increased (property crime, $R^2 = .51$; victimless crime, $R^2 = .35$; white-collar crime, $R^2 = .26$). Thus, one could conclude that the probability that the environment, as meas-

ured by the study variables, influences criminal behavior, decreases as the "status" of the crime increases.

A partial check of this finding was provided by employing a different level of criminal statistics ("crimes known to police") for violent and property crime at both the county and intraurban levels. At the county level, the factor dimensions associated more strongly with property crime ($R^2 = .58$) and less so with violent crime ($R^2 = .39$) indicating that perhaps the police respond to "criminogenic" variables more so than the criminals. The same analysis was repeated for Milwaukee (1973), Wisconsin's largest city. Twenty-two variables were selected, similar to those of the county-level analysis, and when factor analyzed, also yielded five dimensions. However, at the city scale these factors varied in terms of social status rather than by urban or rural shades. At this level explanation was moderate, but the variables again associated more strongly with violent crime than with property crime ($R^2 = .50, .31$). Apparently, then, as statistics measure crime more accurately, complexity increases, as it does when one moves to a larger scale of study such as the city. However, these qualifications are not sufficient to diminish the importance of the study's main finding.

If theory development has been weak due to a extreme concentration on street crime, at least findings at that

level seem to hold up. Significant factors at the county scale indicated that crime, whether of high or low status, is largely an urban trait with one exception. Violent crime which was linked to two of the urban factors was most strongly linked to rural poverty which could mean that Wisconsin's rural culture is more prone to violent response, as is the South when compared to the North in general. Within the city, the perennial link to poverty was uncovered although many confounding factors could be responsible. Also at the city scale, a dimension of middle class status loaded inversely with both violent and property crime. This negative association could mean that when middle class goals are attainable, a situation unfavorable to street crime is produced. Also interesting was the finding that an ethnic dimension at both the county and tract levels was not significant in explaining crime. Possibly Wisconsin's aging stock represents a store of traditional values which inhibit crime.

Recommendations for Further Research

In recent years the tendency has been to shift from studies of violent and property crime in general to a focus on the individual index crimes themselves. Supposedly, closer examination of this sort will unveil the missing links needed to fill the gaps in criminal theory. What is really needed, however, is an analysis across

criminal categories as presented in this thesis. To confirm the present findings, this research must be repeated for different states and at different scales, and continued pressure must be placed on criminal justice agencies to collect the data required. And if the same conclusions are drawn, that environmental variables important to street crime are often irrelevant to higher status crimes, then a number of interesting questions can be raised.

Perhaps the most tantalizing question to come out of the present study is, "What are the causes of higher status crimes?". As suggested earlier, the three elements of criminal behavior are environment, norms of behavior, and criminal sanctions. Research is desperately needed to determine whether higher status crimes are influenced by a greater mix of norms and sanctions or if other environmental variables, currently not measured, are playing a role. If the mix of elements varies for different crimes, then a number of interesting possibilities occur. For instance, most criminologists have attacked the theory of deterrence by pointing to statistics that show rates of index crime unchanged or even higher when criminal sanctions are increased. But on the basis of the present study, one might conclude that the average street criminal is so influenced by his surrounding environment that stiff criminal penalties are of little importance. For

white-collar offenders, on the other hand, stiff penalties may be a greater influence since more options are open to those of higher socioeconomic status.

To determine what mix of criminal elements are important to various illegal activities, one must also be able to quantify the elements. Measuring environment is perhaps the easiest but this does not generally include the individual's perception of it. Sanctions are somewhat harder to measure, but might be based on the maximum sentence for various crimes. However, measuring societal norms of behavior has eluded social scientists for many years, and is a major barrier in the testing of most theories of crime. An entire field of research might be given to defining this concept and putting out hard statistics.

Finally, one other area is wide open for further investigation; defining and testing criminal process. Currently, most criminal theory is untested because of the difficulty in quantifying major concepts, and most ecological work has no theory to explain the associations between the environment as measured and various rates of criminal activity. While work should proceed in this area, it might also be recognized that a perfect causal model is impractical since some causal factors may be unalterable in a free society and a 'rough' theory might be sufficient for society's needs. Because crime is so

complex, however, no single test would be adequate for a comprehensive theory of crime. Instead, a model of crime would have to undergo constant revision as further research indicated. But the important point is that statistical research is necessary to provide evidence for any theory, and some process is necessary to give meaning to the research. Thus, future research might be devoted to clarifying the processes which relate the elements of environment, norms, and sanctions to criminal behavior. Process combined with the parameters which yield the 'proper' mix of these elements in relation to various crimes would help achieve the ultimate goal of criminological research- the establishment of a framework that would enable administrators to pinpoint the necessary changes in policy which would lower crime rates to levels acceptable to the public.

Appendix One

Study Categories and Crime DefinitionsViolent Crime:

Murder- includes all willful killings but not deaths caused by negligence. Suicides, accidental deaths, and justifiable homocides are also excluded from this category.

Aggravated Assault- an unlawful attack by one person upon another with the intent to inflict great bodily injury, usually accompanied by the use of a weapon or other means likely to produce death or serious bodily harm. Also included are attempts and attempted murder.

Property Crime:

Theft- the unlawful taking or stealing of property or articles of value without use of force, violence, or fraud. For purposes of Uniform crime reporting, this offence category does not include embezzlement, "con" games, forgery or worthless checks.

Motor Vehicle Theft- the stealing of a motor vehicle, or driving away without the owner's consent. "Joyride" thefts and attempted thefts are included.

"Victimless" Crime:

Commercialized Vice- Sex offences and attempts, of a commercialized nature, such as: prostitution, keeping bawdy house, disorderly house, or house of ill fame; pandering, procuring, transporting or detaining women for immoral purposes, etc.

Controlled Substances- violations of state laws relating to the unlawful possession, sale, use, growing, manufacturing and making of controlled substances.

Gambling- promoting, permitting or engaging in a

game of chance for reward. This is broken down into bookmaking, numbers, and all others.

"White-collar" Crime:

Forgery- all offences dealing with the making, altering, uttering, or possessing, with intent to defraud, anything false in the semblance of that which is true. Attempts are included.

Fraud- fraudulent conversion and obtaining money or property by false pretenses. Excludes forgery and counterfeiting.

Source: Wisconsin Crime Information Bureau: 1977, App. A.

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